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ABSTRACT

This volume on Phase II of the New York State Educational Information System (NYSEIS) describes the Gross Systems Analysis and Design, which includes the general flow diagram and processing chart for each of the student, personnel, and financial subsystems. Volume II, Functional Specifications, includes input/output requirements and file specifications necessary to support the systems design. Detailed systems design and programing is currently underway as Phase III. The NYSEIS system is designed to provide a complete range of information and data processing services to school districts in New York State. The report concludes that regionalizatien is the solution to the problem of providing comprehensive computer services to school districts. (JF)

N-56

The New York State Education Department and The Albany-Schoharie-Schenectady Board of Cooperative Educational Service

ED043941

New York State Educational Information System (NYSEIS) Systems Design

Prepared by
Price Waterhouse & Co.
July 1969

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EA 002 970

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Division of Educational Management Services
Albany, New York 12224

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ALBANY, NEW YORK 12224

STANLEY L. RAUB
ASSOCIATE COMMISSIONER FOR
EDUCATIONAL FINANCE
AND MANAGEMENT SERVICES

November 12, 1969

ED043941

MEMORANDUM TO: To Whom It May Concern

FROM: Stanley L. Raub

SUBJECT: New York State Educational Information System Report

This is Volume I of the New York State Educational Information System, Phase II final report, prepared by Price Waterhouse and Co. This report, which has been approved in principle by the Statewide Steering Committee, is serving as the working document for Phase III, detail design and programming. Volume I, the Systems Design, includes the general flow diagram and the processing chart for each of the student, personnel and financial subsystems. Volume II, the Functional Specifications, includes the input/output requirements and file specifications necessary to support the Systems Design, as well as serve as a reference document for those charged with the technical implementation of the system and is available by special request. We believe these documents comprise the most comprehensive report in the literature today describing school district data processing needs.

Phase I of the NYSEIS program, which was completed in November 1967 by the System Development Corporation, provided the conceptualization for the regional network. Phase II, the Gross Systems Analysis and Design, was completed in September of this year by Price, Waterhouse and Co. Phase III, currently underway, involves the detailed system design and programming. Phase IV, the implementation of one or more regional centers, will follow upon the completion of Phase III.

We firmly believe that regionalization is the solution to the problem of providing comprehensive computer services to school districts and that the current philosophy of design will provide a sound and effective basis for these services.

Sincerely yours,

Stanley L. Raub

Stanley L. Raub

PRICE WATERHOUSE & CO.

60 BROAD STREET

NEW YORK 10004

September 30, 1969

Mr. Richard C. Lesser
Statewide Coordinator, New York State
Educational Information System
State Education Building
Albany, New York 12224

Dear Mr. Lesser:

We are pleased to submit 1) the attached report which presents the system design we have developed for the New York State Educational Information System (NYSEIS) and 2) the accompanying volume which presents the detailed functional specifications which served as the basis for system design.

The NYSEIS system is designed to provide a broad range of data processing and information services to the school districts of the State of New York through a network of regional service centers. The overall system consists of four basic subsystems, a student subsystem, a personnel subsystem, a financial subsystem and a facilities subsystem, each designed to provide a range of services within these functional areas.

The functional requirements to be met by the NYSEIS system were established by surveying some twenty school districts and Boards of Cooperative Educational Services (BOCES) throughout the State. These were selected to include districts which are representative of the widely varying requirements of the more than 750 districts in the State. The functional requirements for each of the four subsystems which were established as a result of this survey were reviewed by educational data processing specialists throughout the State before adoption as the basis for system design.

The system design effort which followed the establishment of functional requirements was aimed at selecting from among the wide range of available alternatives, the most suitable processing methods, file structures, data collection and input techniques, and basic computer equipment configuration. System designs were developed for the student, personnel, and financial subsystems at a level of detail suitable for use in the implementation work to follow. Design work on the facilities subsystem was deferred by mutual agreement pending further clarification of certain requirements and potential benefits.

Throughout the study we have been fortunate in having the full cooperation and assistance of many individuals in all parts of the State representing various school districts, BOCES, and the New

Mr. Richard C. Lesser
Statewide Coordinator, New York State
Educational Information System

September 30, 1969

York State Education Department. Working relationships among participants in the effort have been excellent and productive and the resulting reports are truly the product of all who participated.

We wish to express our gratitude for all of the assistance and cooperation we received during the course of the study and we look forward to the day when the NYSEIS system will be in full operation serving school districts throughout the State.

Yours very truly,

Price Waterhouse & Co.

NEW YORK STATE
EDUCATIONAL INFORMATION SYSTEM
(NYSEIS)

SYSTEM DESIGN

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I. INTRODUCTION

A. Statement of objectives

The basic objectives of this project were set forth in the request for proposals and other documents that it cited. In essence the objectives were to produce:

- an overall system design for a New York State Educational Information System (NYSEIS) which is to provide a complete range of information and data processing services to school districts in the State of New York.
- a set of systems specifications for NYSEIS which are to be used as a basis for obtaining equipment proposals from computer manufacturers.

A fundamental objective of the NYSEIS system is that it have general applicability to the more than 750 operating school districts in the State of New York. The system should provide as high a degree of standardization as is compatible with the needs of the various school districts. To accommodate truly different requirements among the various school districts it should provide optional features so as to be readily adaptable to meet the needs of school districts throughout the state.

B. Scope of work

The NYSEIS system consists of three basic subsystems encompassing the functions listed below:

Student Subsystem

- Census
- Enrollment
- Attendance
- Grade Reporting
- Permanent Records
- Test Scoring and Analysis
- Student Scheduling

Personnel Subsystem

- Payroll
- Personnel Records
- Staff Directories
- Retirement
- Professional Qualifications

Financial Subsystem

- Budget Preparation
- Encumbrance Accounting
- Accounts Payable
- General/Revenue Ledger

Initial planning included a fourth subsystem, namely, the "Facilities Subsystem" consisting of the following applications:

Inventory Control	Transportation
Construction Requirements	Library & Textbook Accounting
Maintenance	Cafeteria Accounting

During the course of the analysis phase of the project it was decided that further development of the Facilities Subsystem would be postponed until a future date. Section V will contain a preliminary statement of the functional requirements of the Facilities Subsystem.

In accordance with the request for proposals the following have been developed and documented:

1. gross flow charts for each of the three subsystems indicating the interrelationships of each application in the subsystem.

2. integrated gross flow diagrams for the entire system demonstrating the interrelationship of information flow through each subsystem and the overall system.

3. preliminary master file formats to serve as information data base for all activities in each subsystem.

4. preliminary input formats and output formats to support information processing requirements.

5. a master operations calendar, the purpose of which is to indicate the major activity periods during the processing year.

6. a specifications document which will enable computer manufacturers to submit a configuration which will support the processing outlined by the gross systems design.

II. ANALYSIS OF REQUIREMENTS

A. Approach to project

Development of NYSEIS is viewed as basically a systems engineering project involving, first, a careful analysis and determination of what the system must do and, secondly, the design of how the system will operate.

The project team focused its efforts initially on the analysis of specific information needs of school districts and the State Education Department. Anticipated future needs as well as present needs were studied and emphasis was placed upon the task of defining and analyzing differences in requirements among school districts. On the basis of this study of common and differing needs, the services to be provided by NYSEIS, the end products to be produced and the input required were defined. As a result, a set of Functional Specifications for NYSEIS was developed and used as a starting point for the systems design effort. These Functional Specifications were reviewed with representatives of the State Education Department, Boards of Cooperative Educational Services and the Division of Educational Management Services to make certain that the requirements outlined in the specifications represented a sound basis for systems designs.

After the Functional Specifications were agreed upon, attention was turned to the technical matter of system design. The emphasis at this point was shifted from what the system should accomplish to how the system should accomplish it. Primary consideration was given to the design of files for use in the development of a comprehensive information data base to support the three subsystems. Once the data base was designed it was reviewed by representatives of the BOCES to make certain that it represented a sound information base.

Next, attention was turned to the design of application processing within subsystem and the interface between applications within subsystem. The flow charts in Section IV of this report represent the result of the system design and have been reviewed with several directors of BOCES and representatives of the State Education Department.

B. Survey of

1. School districts and BOCES

The study team, in cooperation with members of the State Department of Education, completed the data gathering phase of the survey in the school districts and BOCES. Those visited included:

School districts

Irvington
South Huntington
Buffalo
Williamsville
Great Neck
East Meadow
Schenectady
Bethlehem
Farmingdale
Sewanhaka
North Tonawanda
Kenmore
East Greenbush
South Colonie
Rochester
New Paltz
Vincentian Institute

BOCES

Westchester I & II
Nassau
Albany-Schenectady-Schoharie
Ontario-Seneca-Yates
Suffolk II & III
Erie I
Rockland

During the survey, detailed analysis was made of the manual and automated record systems now in use in school districts and Boards of Cooperative Educational Services.

At that time the study team met with local school district representatives and gathered information concerning (1) source documents, their format and content, (2) processing procedures and methods, both mechanized and manual, and (3) output documents and reports produced, including content and format. The views of district officials as to anticipated future requirements and data needs of the school districts and personnel were also obtained.

The applications and functions surveyed included the Student Subsystem, Personnel Subsystem, Financial Subsystem,and Facilities Subsystem.

Identification of the common requirements of the 16 school districts and the special requirements of particular types of districts with respect to the student, personnel, financial and facilities subsystems was also made.

Lastly, each application was analyzed to determine the probable extent to which standardization of inputs and outputs would be feasible and acceptable to the local school districts.

2. State Education Department

Our survey of the State Education Department started with assembling and analyzing all records and reports concerning school district operations required by the State Education Department. Next an analysis was made of the manual and mechanical processing performed by State Education Department on information and reports submitted by school districts, to identify opportunities for preprocessing at regional centers. The State Education Department officials outlined their views concerning probable future requirements for information and analyses relating to the school districts.

3. Systems in other states

During the course of this project, information was assembled on the characteristics of systems in several other states which have made significant progress in developing Educational Information Systems and regional services.

In recent months, a visit was made to the State of Oregon to review the OTIS project which represents a state-wide centralized approach to cooperative data processing services with all school districts communicating with the system via remote terminal.

During a previous engagement a visit was made to California to survey the results of regionalization in that state. The data processing effort of the Chicago Board of Education's goal of a Total Information System was also reviewed. In addition, a comprehensive state-wide analysis was also made of the present posture of administrative data processing efforts in Maryland public schools.

III. OBJECTIVES AND CONSIDERATIONS IN THE DEVELOPMENT OF NYSEIS

Fundamental objectives and functional requirements of NYSEIS have been developed, based on the following:

1. Survey and evaluation of the current status of data processing in sixteen school districts.

2. Survey and evaluation of current data processing activities at seven BOCES serving several hundred school districts.

3. Meetings and discussions with the Division of Educational Management Services.

4. Discussions with representatives of other offices of the New York State Education Department.

5. Meetings with other New York State Agencies.

6. Evaluation of information obtained about similar efforts in other states. The information has been acquired from field investigation and from sources available to the general public.

7. Study and evaluation of information available from the previous phase (Phase I) of the NYSEIS developmental plan.

8. Study Team experience in similar undertakings in educational and noneducational environments.

Five principal objectives were identified as a basis for system design. These are set forth below with comments relating to each. These objectives represent the foundation for the design and implementation of effective regional data processing support to school district administration.

Objective 1. The regional center must have the capability to support multiple districts of varying size and requirements.

Objective 2. Uniform systems must be developed in support of regional data processing services; however, allowances must be made for a certain amount of local school district flexibility.

Objective 3. The responsibility for processing and operational control must be vested in the regional center. Validity and control of administrative data must be the responsibility of the local unit. Adherence to both regulations should be coordinated through cooperative effort.

Objective 4. Modularity of systems design should be achieved so that regional center processing can be effectively used by school districts of varying sizes. This means that a district with a few schools and a small student population should have the opportunity to avail itself of the same services and support required by districts having many schools and a large student body.

Objective 5. Construct an information data base which will effectively assist in the administration of student personnel and financial programs at the school district level today and in the future. Current requirements do not indicate that immediate retrieval or interrogation of student and/or personnel or financial information is necessary. This does not mean that future requirements will not call for remote interrogation capabilities. Therefore, files should be designed with this possibility in mind.

Current requirements do not dictate the need for "real-time" processing of normal daily transaction data. Therefore, "batch" processing will be a standard method of file maintenance and report preparation until such time as other effective and economical "real-time" methods are available and deemed necessary.

VI. DESCRIPTION OF NYSEIS

A. Introduction

This section contains a general flow diagram and the processing flow charts for each of the Student, Personnel and Financial subsystems.

The general flow diagrams depict the interrelationships of the applications and files in each subsystem. The processing flow charts show the specific runs within each application including files, program functions, inputs and outputs.

The flow diagrams proceed from top to bottom. The processing symbols contain the program name, the run number and a brief description of the functions the program is to perform. Each run, including sorts, is numbered within each subsystem. These run numbers are used in the operations calendars in Section V.

Of special note is the use of the offline storage symbol. This symbol indicates the source and disposition of the major files. For instance, on page IV-24, the Enrollment file and the Course Master are shown coming from the file library. After being read by Program S-34, the Course Master is returned to the library. The Enrollment file is used again before being returned.

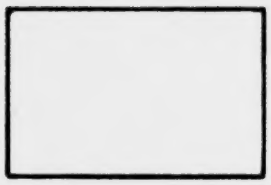
All subsystems show print output being written on files for printing in a spooling mode or off-line on a satellite system. The subsystems further use a technique of report generation that permits reports in different sequences to be drawn from a master file in the same pass. This technique is based upon a program called Report Writer. Report data are drawn from the master file in line-image form or as raw data. Control records that describe the input and the desired reports are also written. The report file is sorted into the desired sequences on a sort key. Report Writer analyzes the control records and prints the reports, inserting headings and taking totals.

This technique has two major advantages:

1. When reporting requirements change, a new report may be generated by simply changing the control records.

2. Report Writer provides the means of drawing reports from a file in difference sequences, some of which may be in a different sequence than the file. Whenever totals and headings are required, this technique saves sorting the master file for each report. Instead, only the report file is sorted.

SYSTEM FLOWCHART SYMBOLS

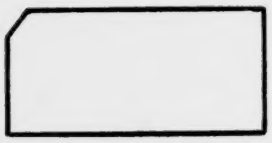


PROCESSING

A major processing function performed by a computer program.

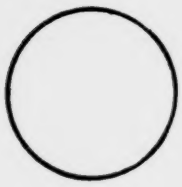
DOCUMENT

Paper documents and reports of all varieties



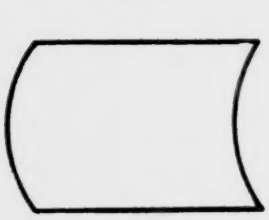
PUNCHED CARD

All varieties of punched cards.



MAGNETIC TAPE

Used to indicate files residing on magnetic tape.

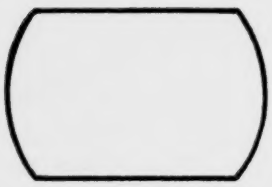


DIRECT ACCESS DEVICE

Used to indicate files residing on direct access devices such as disks and drums.

OFFLINE STORAGE

Used to indicate the source and disposition of major files in the system.



KEYING OPERATION

An operation utilizing a key-driven device.

CLERICAL OPERATION

A manual offline operation not requiring mechanical aid.

CONNECTOR

An entry from, or an exit to another part of the flowchart.

OFFPAGE CONNECTOR

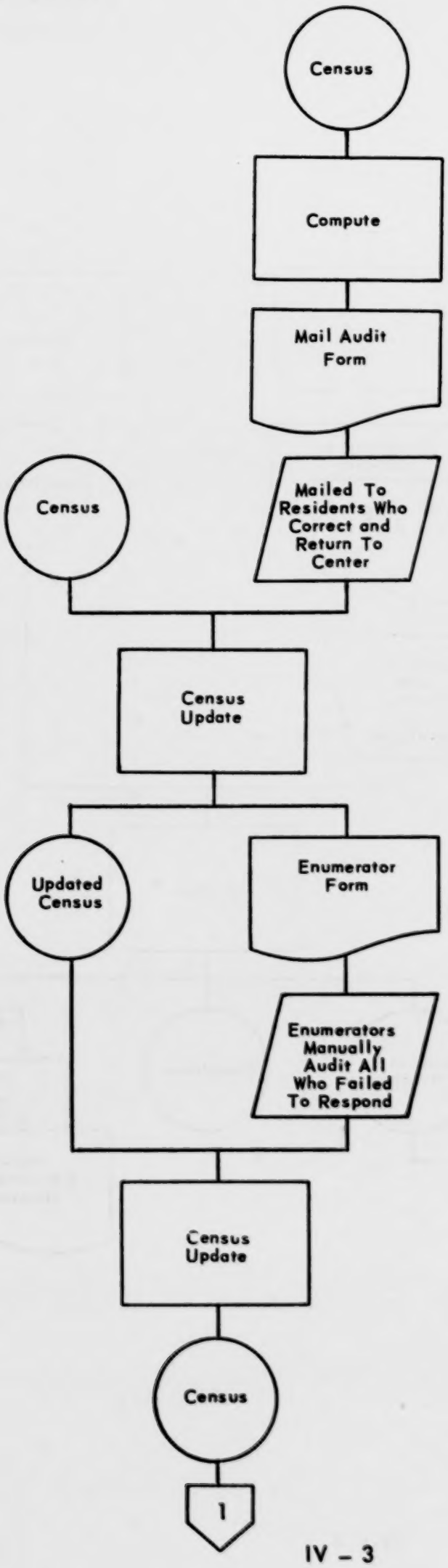
A connector used instead of the connector symbol to designate entry to or exit from a page of the flowchart.

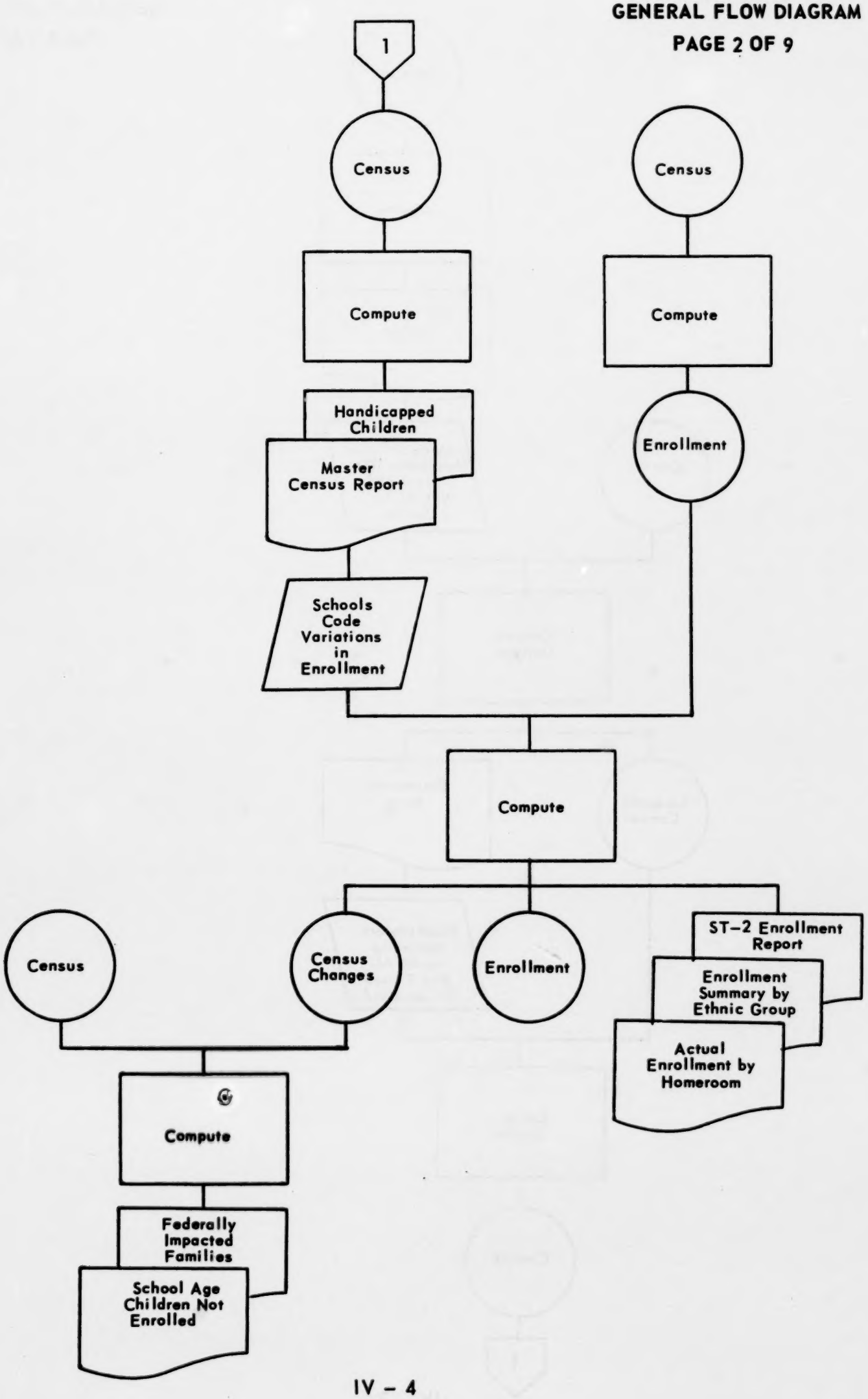
B. The System

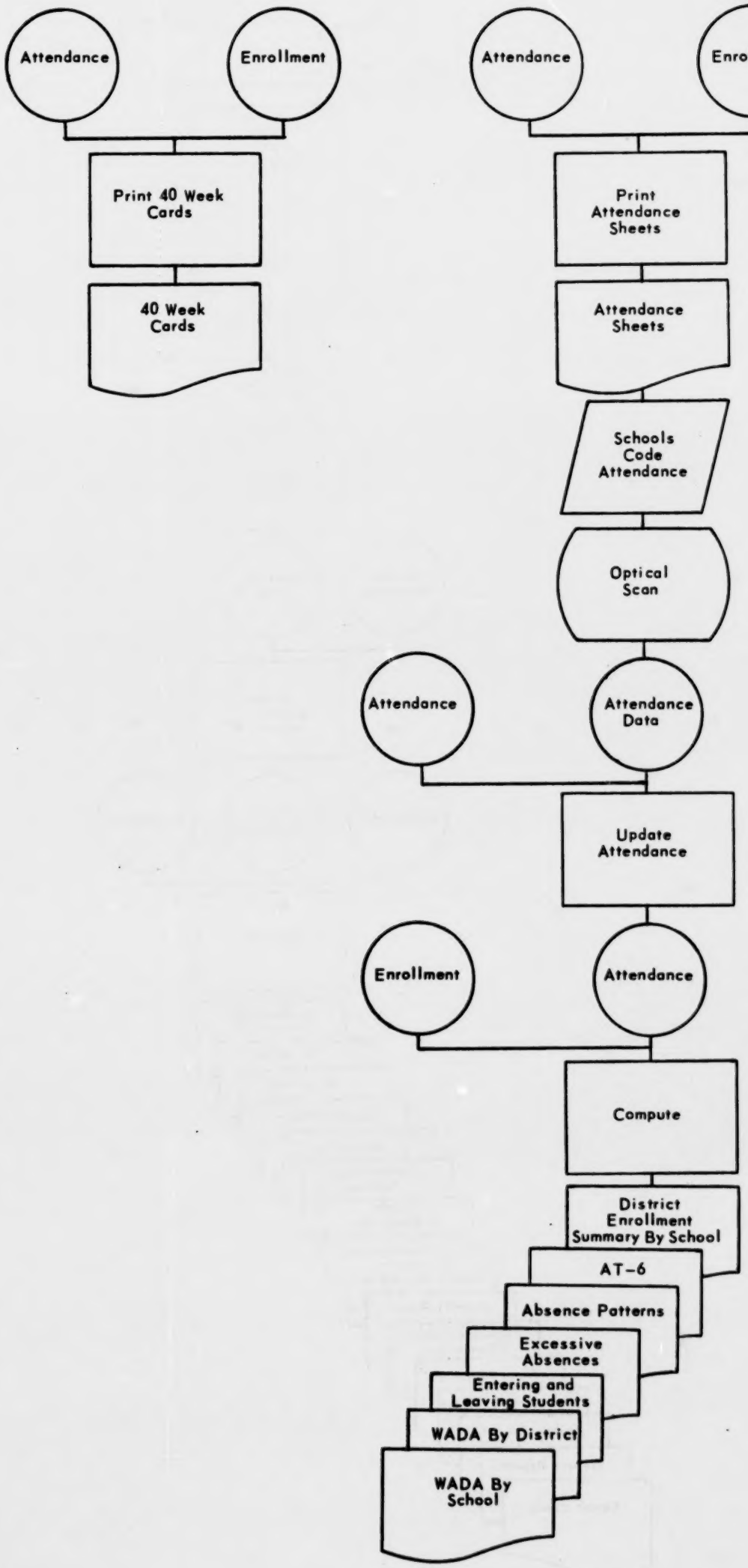
1. Student Subsystem

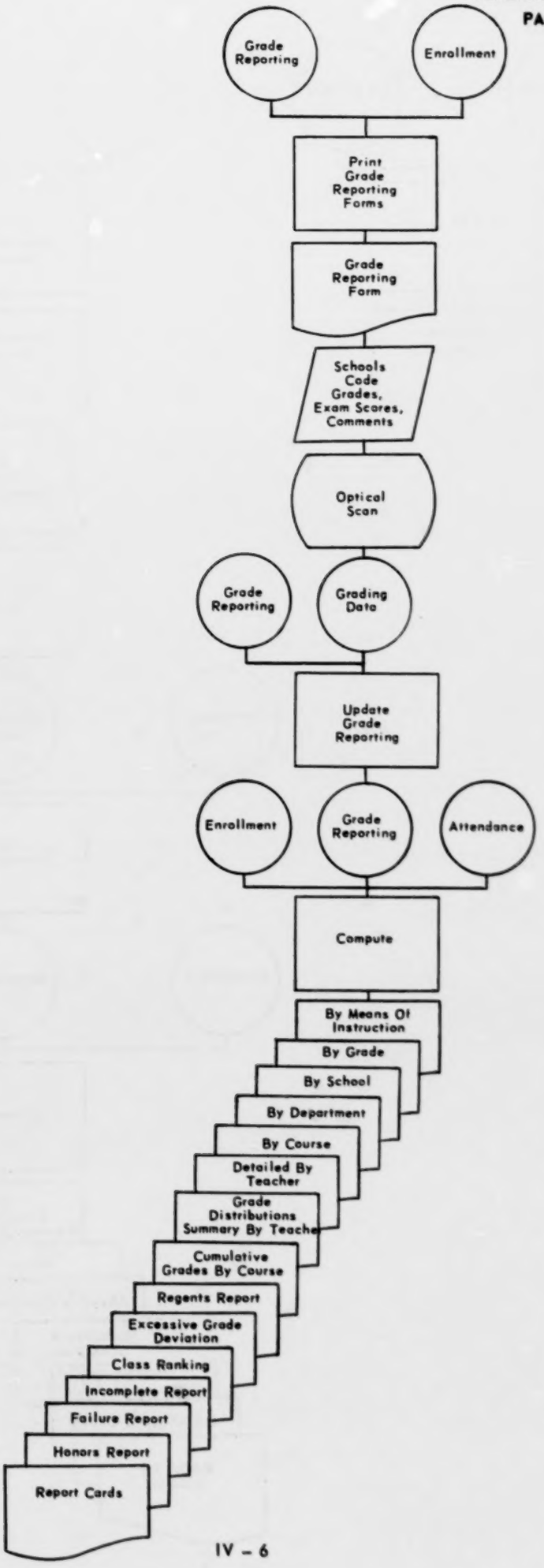
- General Flow Diagram
- Processing Flow Charts

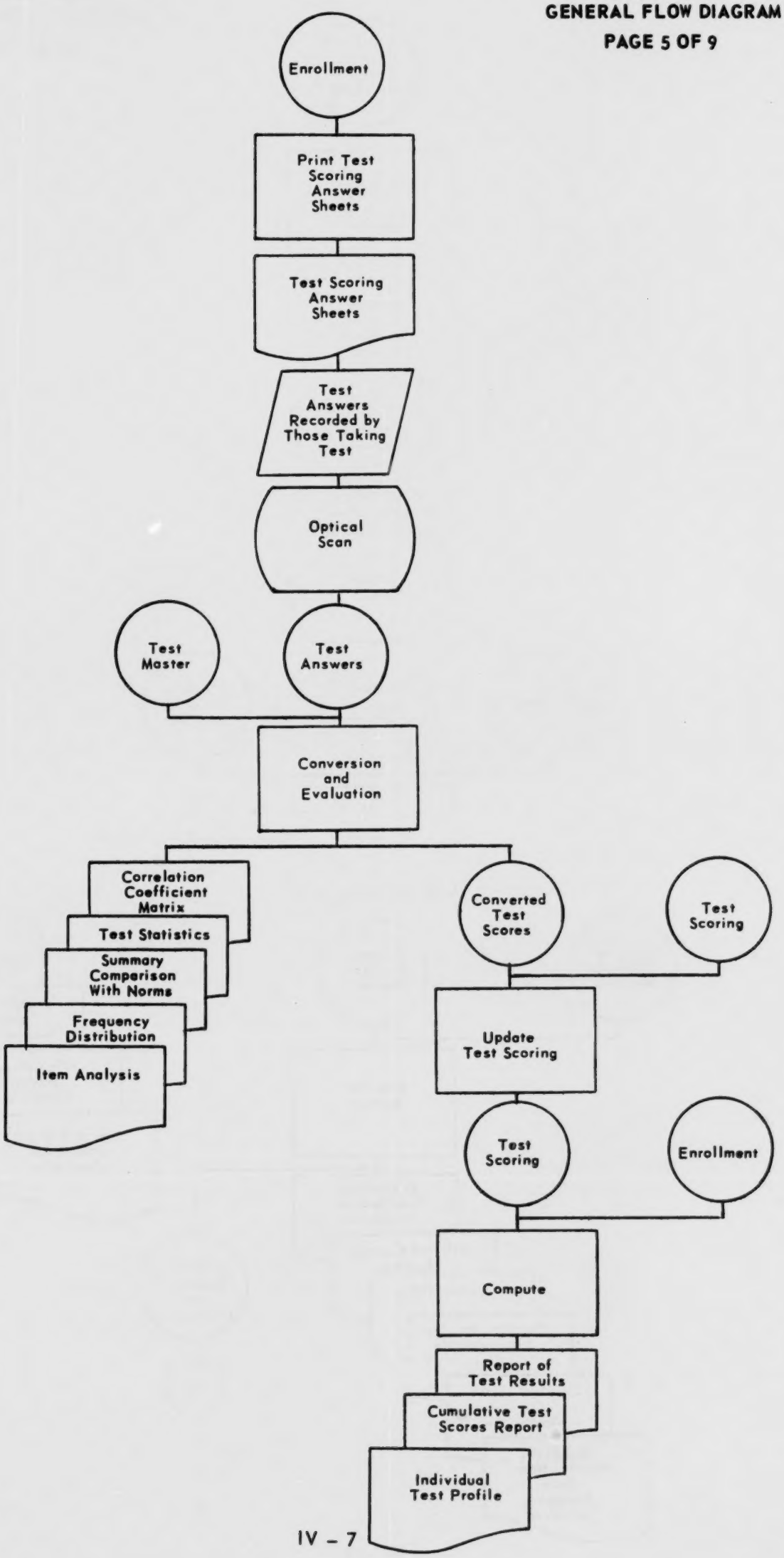
NYSEIS
STUDENT SUBSYSTEM
GENERAL FLOW DIAGRAM

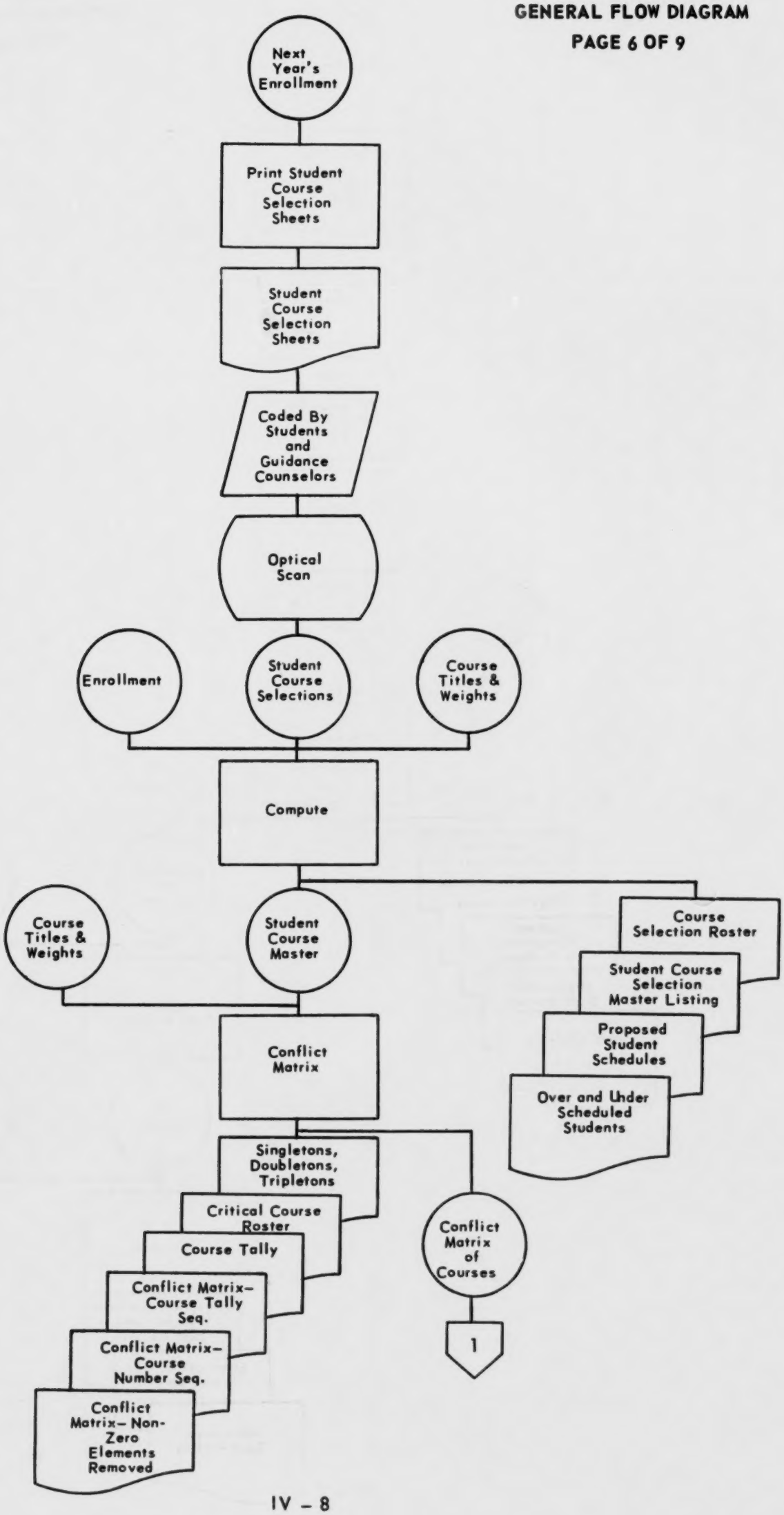



1
Census
Compute
Handicapped Children
Master Census Report
Schools Code Variations in Enrollment
Census
Compute
Enrollment
Compute
Census
Census Changes
Enrollment
ST–2 Enrollment Report
Enrollment Summary by Ethnic Group
Actual Enrollment by Homeroom
Compute
Federally Impacted Families
School Age Children Not Enrolled


Attendance
Enrollment
Print 40 Week Cards
40 Week Cards
Attendance
Enrollment
Print Attendance Sheets
Attendance Sheets
Schools Code Attendance
Optical Scan
Attendance
Attendance Data
Update Attendance
Enrollment
Attendance
Compute
District Enrollment Summary By School
AT-6
Absence Patterns
Excessive Absences
Entering and Leaving Students
WADA By District
WADA By School

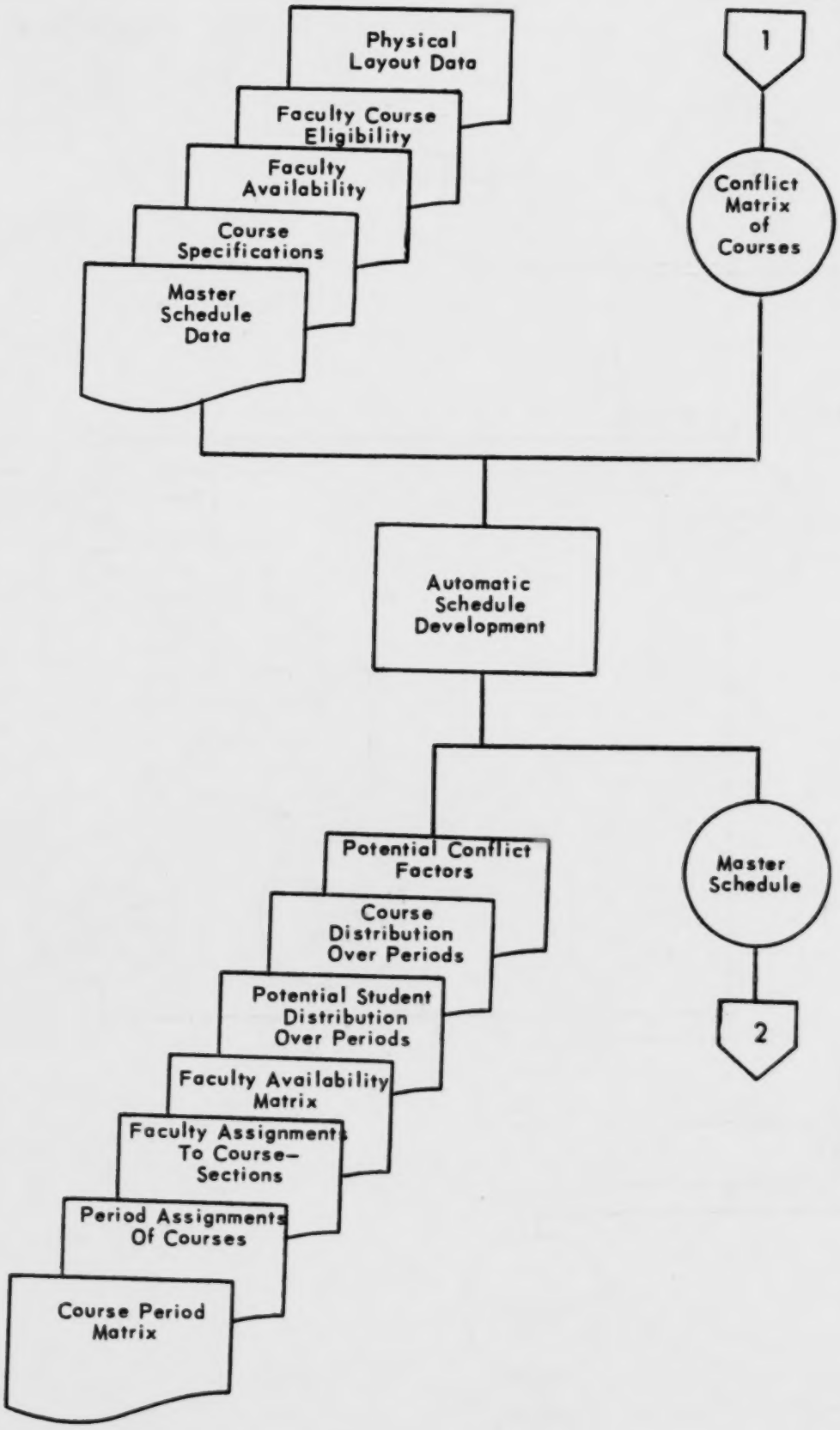

Grade Reporting
Enrollment
Print Grade Reporting Forms
Grade Reporting Form
Schools Code Grades, Exam Scores, Comments
Optical Scan
Grade Reporting
Grading Data
Update Grade Reporting
Enrollment
Grade Reporting
Attendance
Compute
By Means Of Instruction
By Grade
By School
By Department
By Course
Detailed By Teacher
Grade Distributions Summary By Teacher
Cumulative Grades By Course
Regents Report
Excessive Grade Deviation
Class Ranking
Incomplete Report
Failure Report
Honors Report
Report Cards

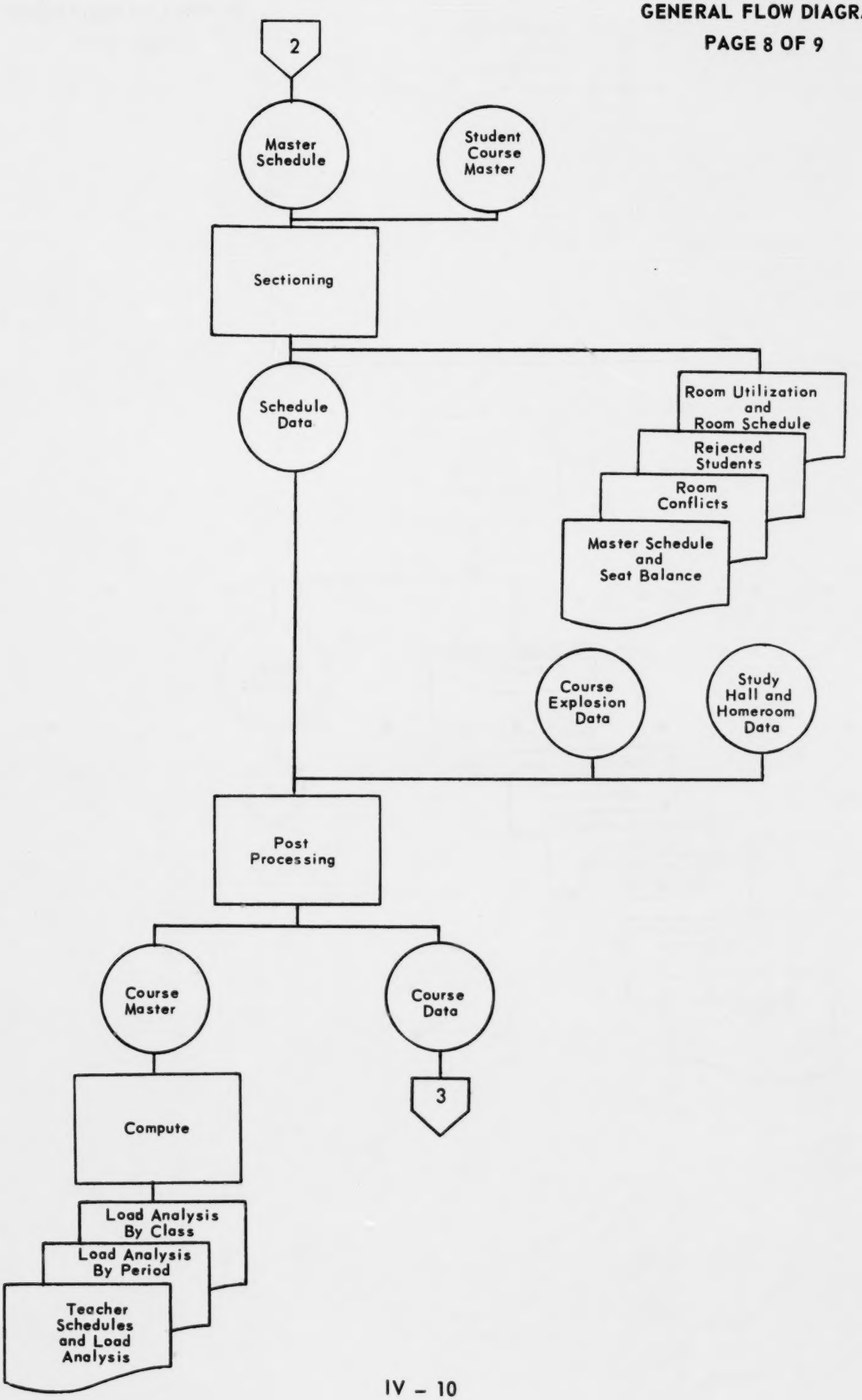

Enrollment
Print Test Scoring Answer Sheets
Test Scoring Answer Sheets
Test Answers Recorded by Those Taking Test
Optical Scan
Test Master
Test Answers
Conversion and Evaluation
Correlation Coefficient Matrix
Test Statistics
Summary Comparison With Norms
Frequency Distribution
Item Analysis
Converted Test Scores
Test Scoring
Update Test Scoring
Test Scoring
Enrollment
Compute
Report of Test Results
Cumulative Test Scores Report
Individual Test Profile

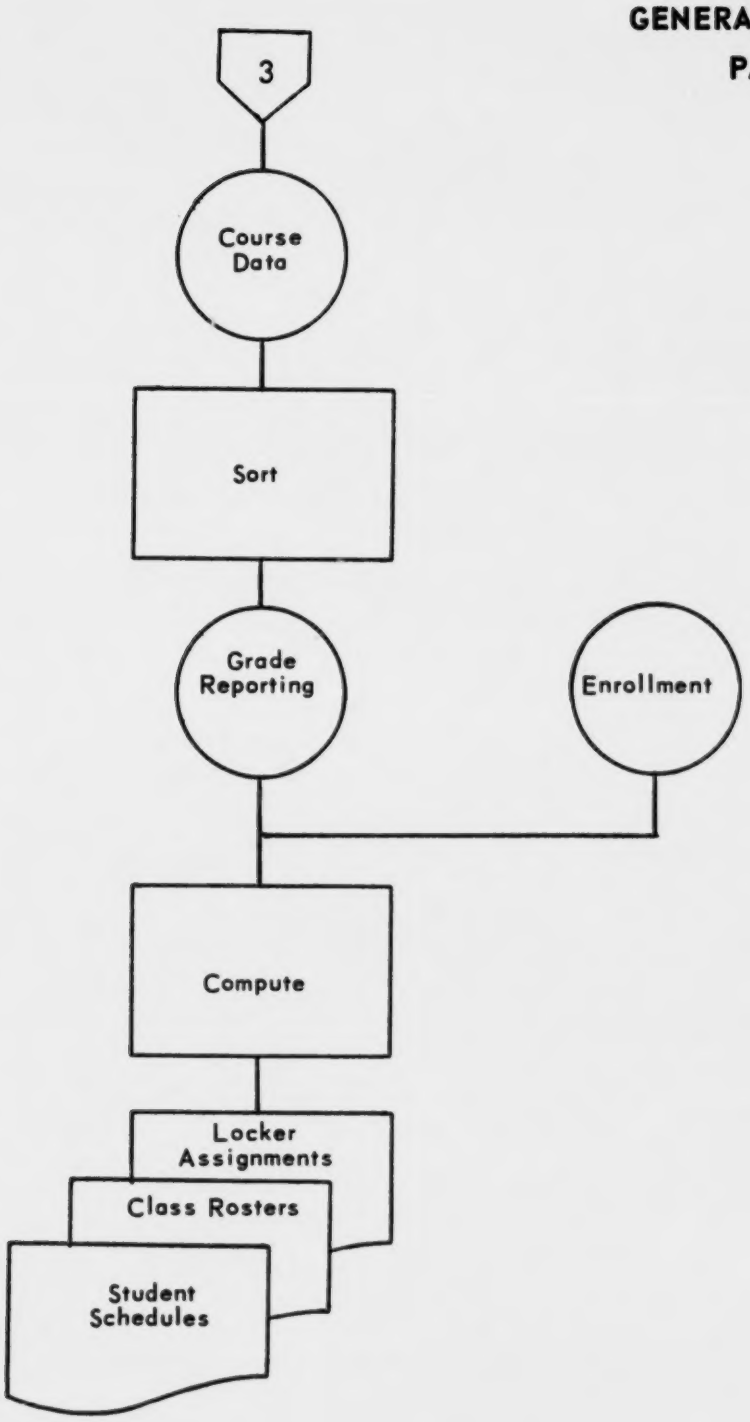

Next Year's Enrollment
Print Student Course Selection Sheets
Student Course Selection Sheets
Coded By Students and Guidance Counselors
Optical Scan
Enrollment
Student Course Selections
Course Titles & Weights
Compute
Course Titles & Weights
Student Course Master
Course Selection Roster
Student Course Selection Master Listing
Proposed Student Schedules
Over and Under Scheduled Students
Conflict Matrix
Singletons, Doubletons, Tripletons
Critical Course Roster
Course Tally
Conflict Matrix– Course Tally Seq.
Conflict Matrix– Course Number Seq.
Conflict Matrix– Non-Zero Elements Removed
Conflict Matrix of Courses
1

17

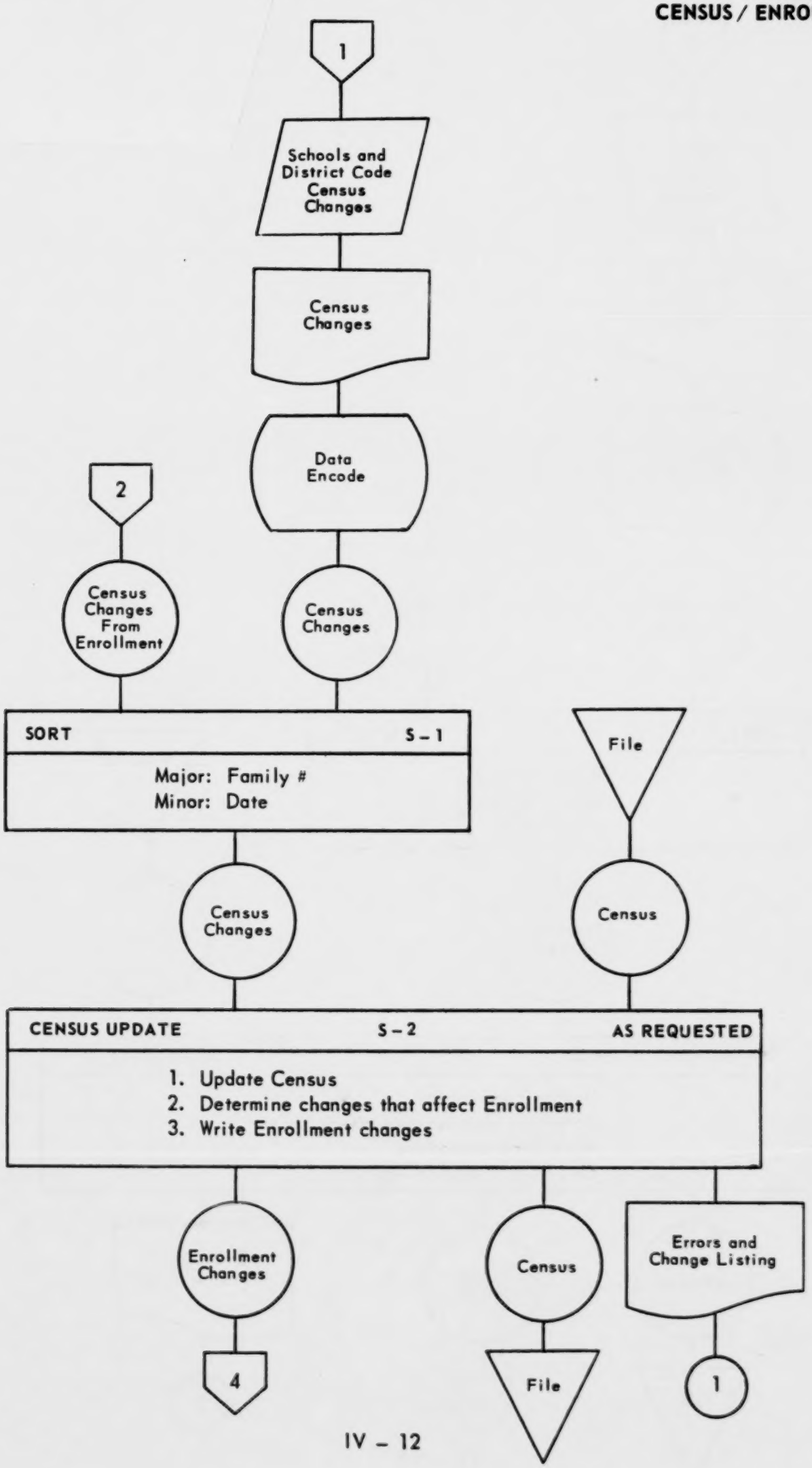
NYSEIS
STUDENT SUBSYSTEM
GENERAL FLOW DIAGRAM

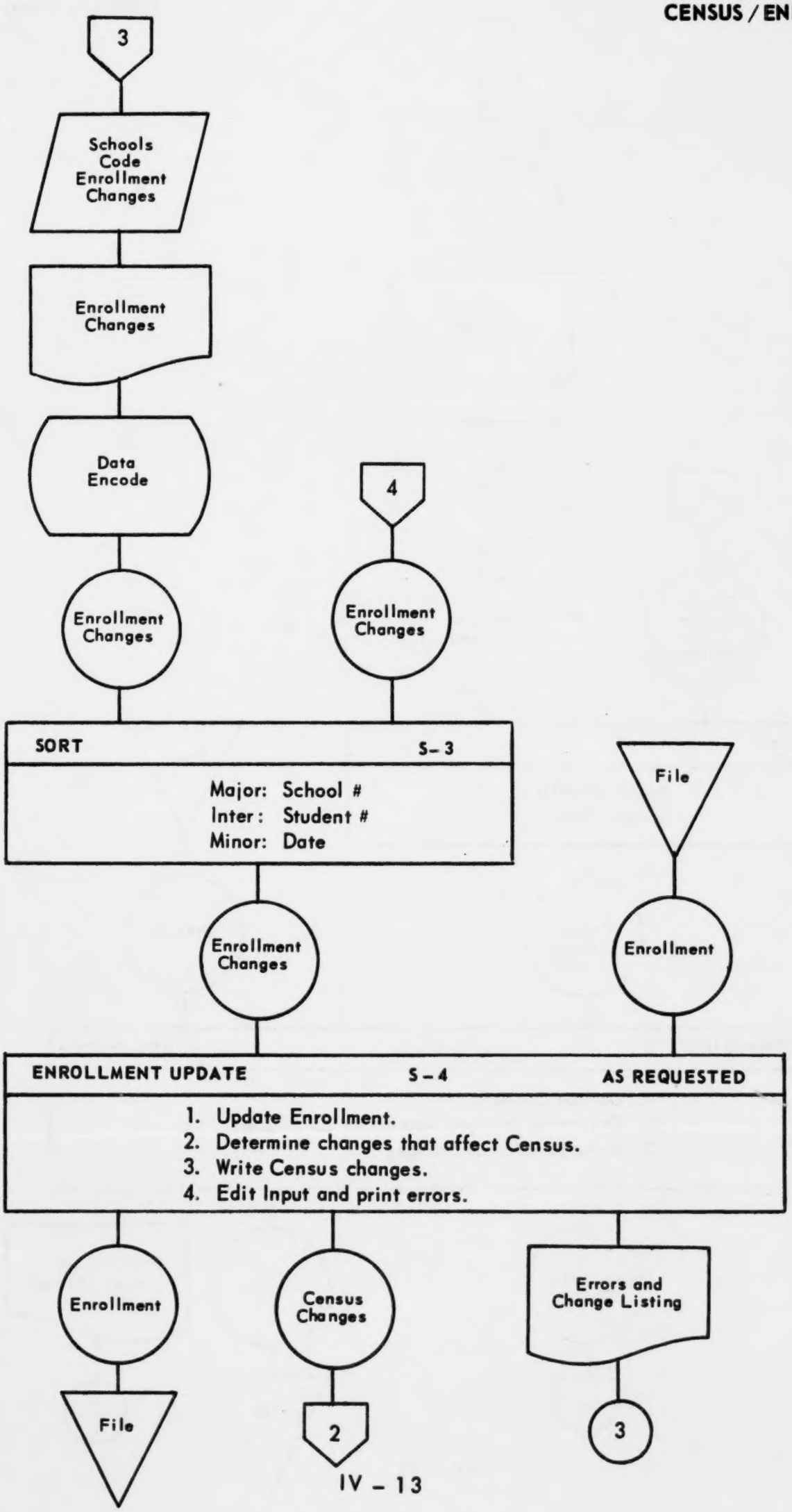


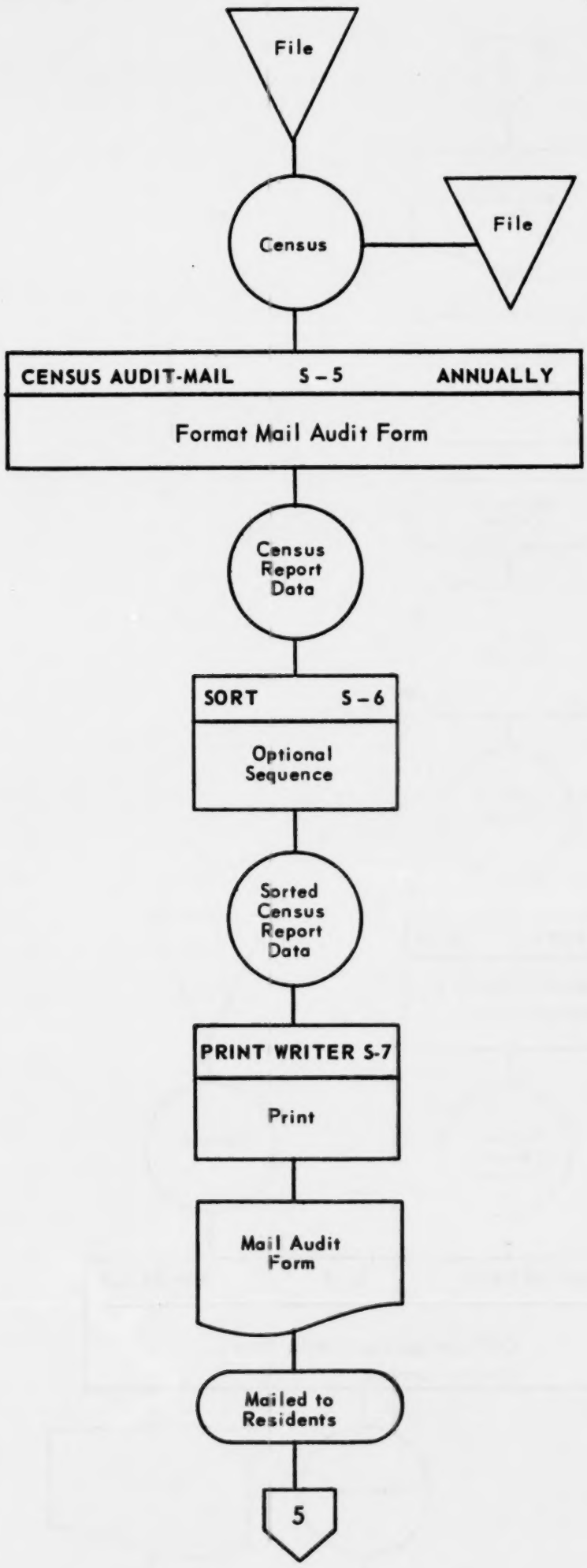

2
Master Schedule
Student Course Master
Sectioning
Schedule Data
Room Utilization and Room Schedule
Rejected Students
Room Conflicts
Master Schedule and Seat Balance
Course Explosion Data
Study Hall and Homeroom Data
Post Processing
Course Master
Course Data
3
Compute
Load Analysis By Class
Load Analysis By Period
Teacher Schedules and Load Analysis

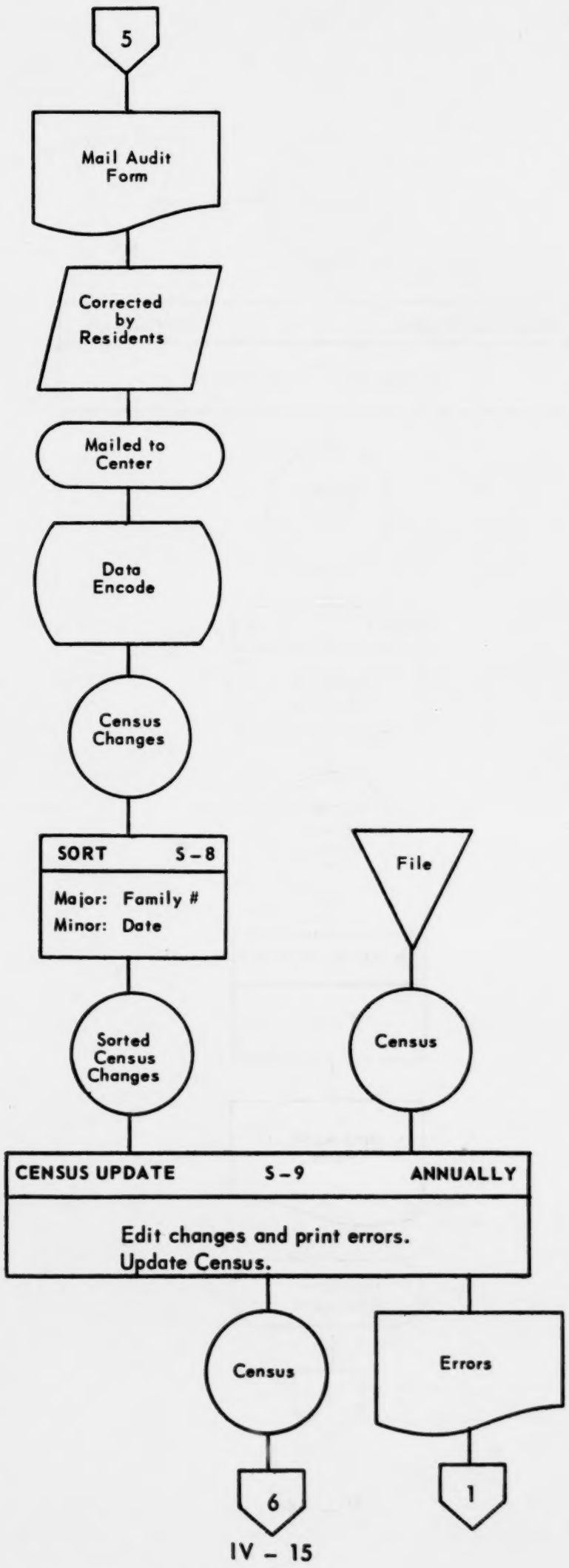

3
Course Data
Sort
Grade Reporting
Enrollment
Compute
Locker Assignments
Class Rosters
Student Schedules

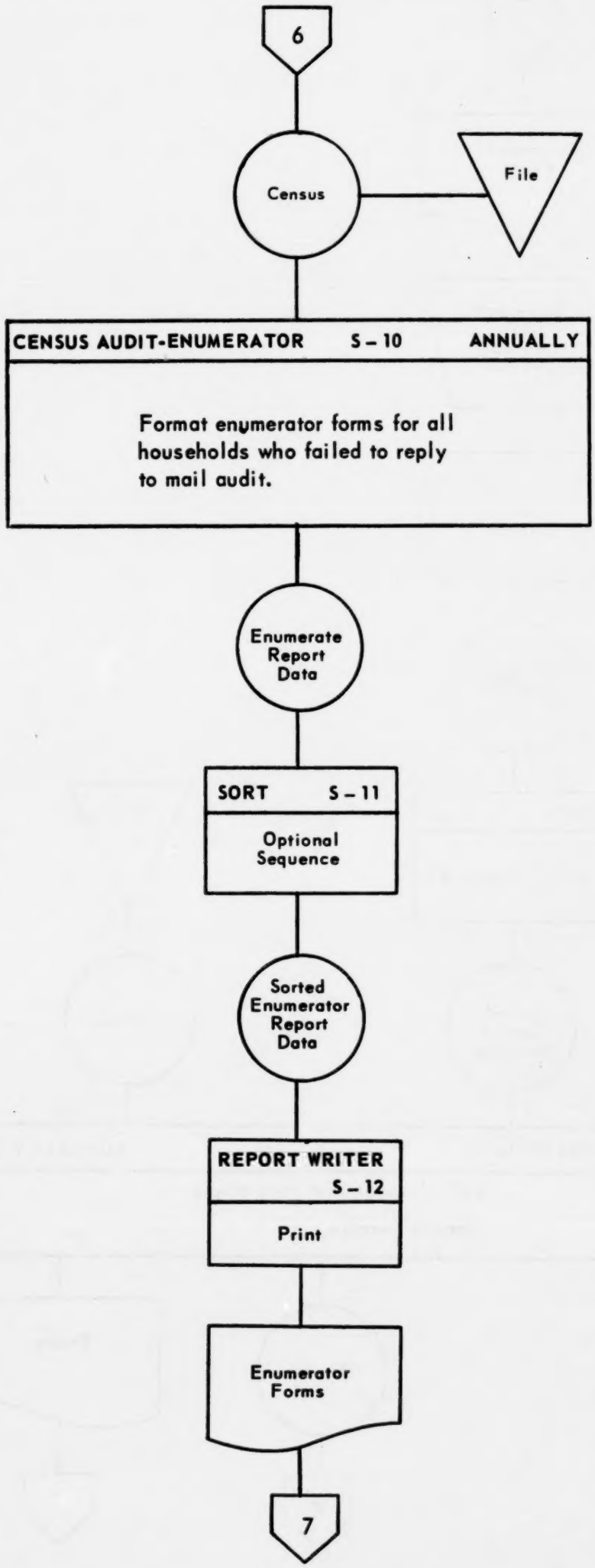
NYSEIS
CENSUS / ENROLLMENT

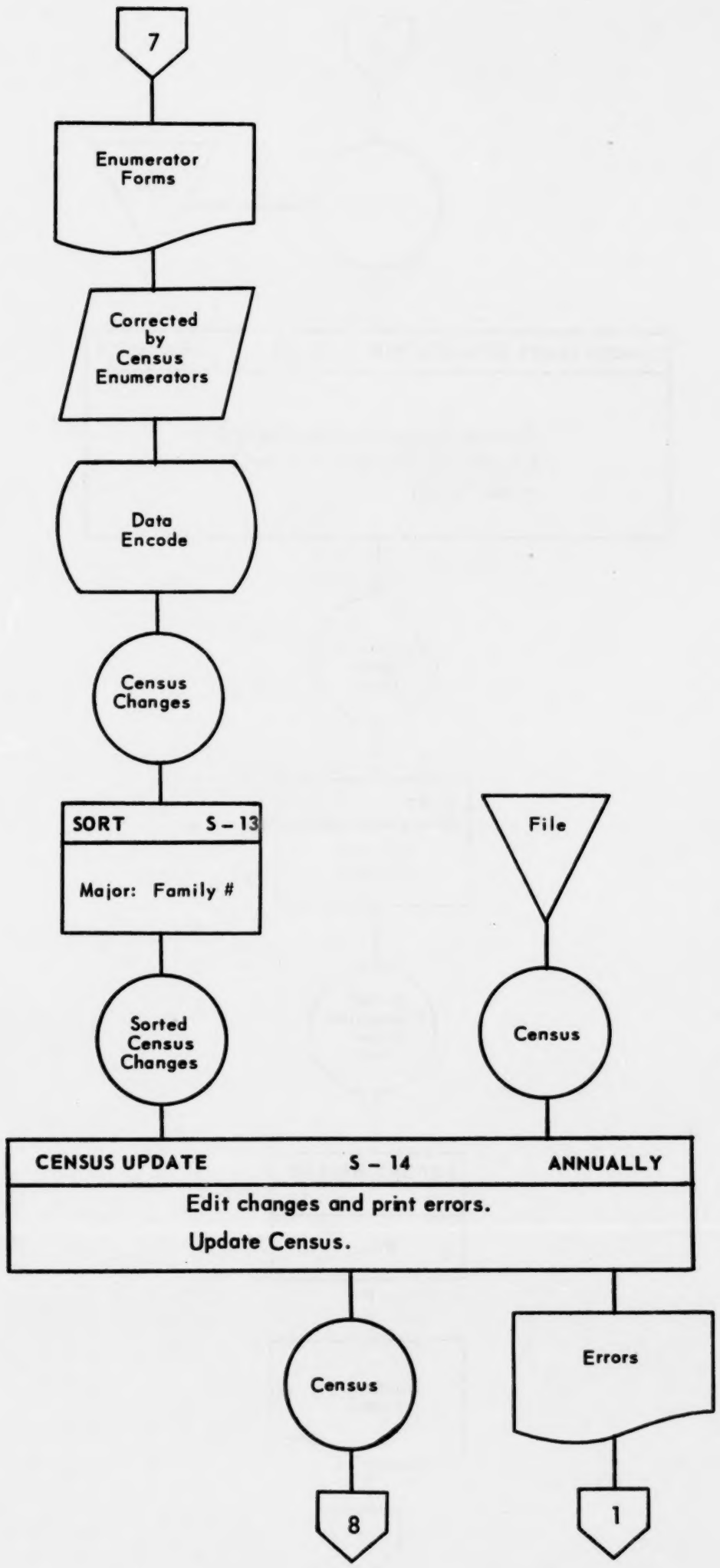


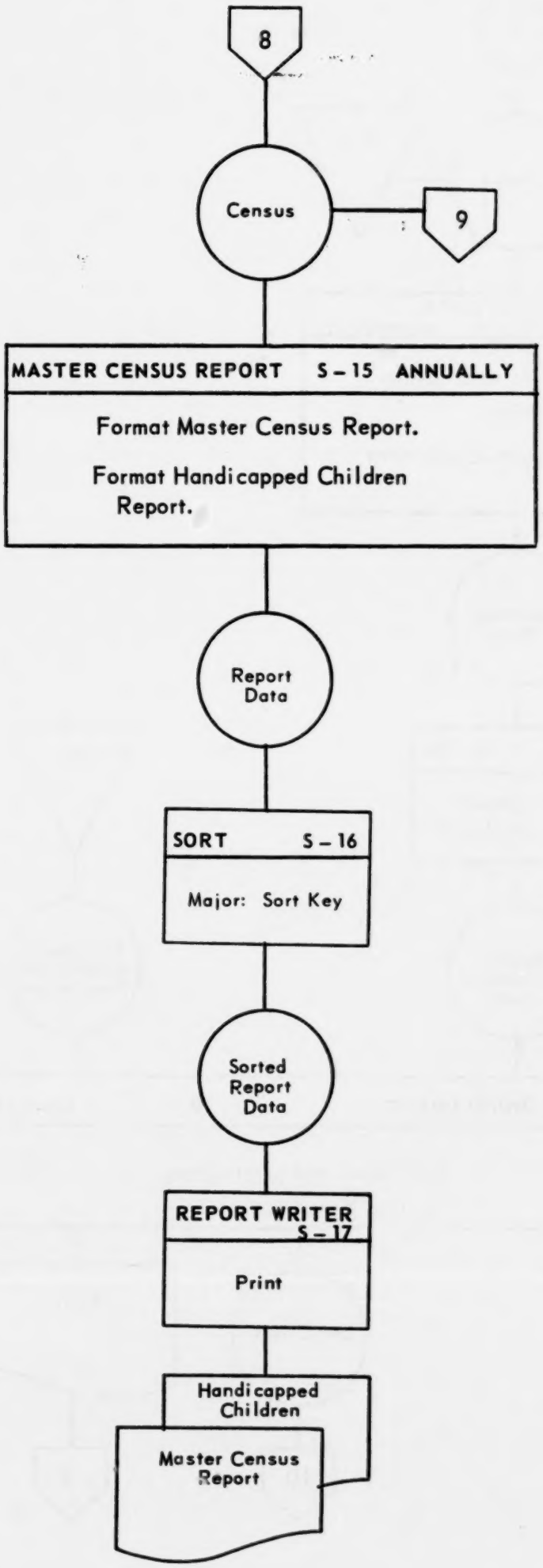

3
Schools Code Enrollment Changes
Enrollment Changes
Data Encode
Enrollment Changes
4
Enrollment Changes
SORT S-3
Major: School #
Inter: Student #
Minor: Date
File
Enrollment Changes
Enrollment
ENROLLMENT UPDATE S-4 AS REQUESTED
1. Update Enrollment.
2. Determine changes that affect Census.
3. Write Census changes.
4. Edit Input and print errors.
Enrollment
Census Changes
Errors and Change Listing
File
2
3

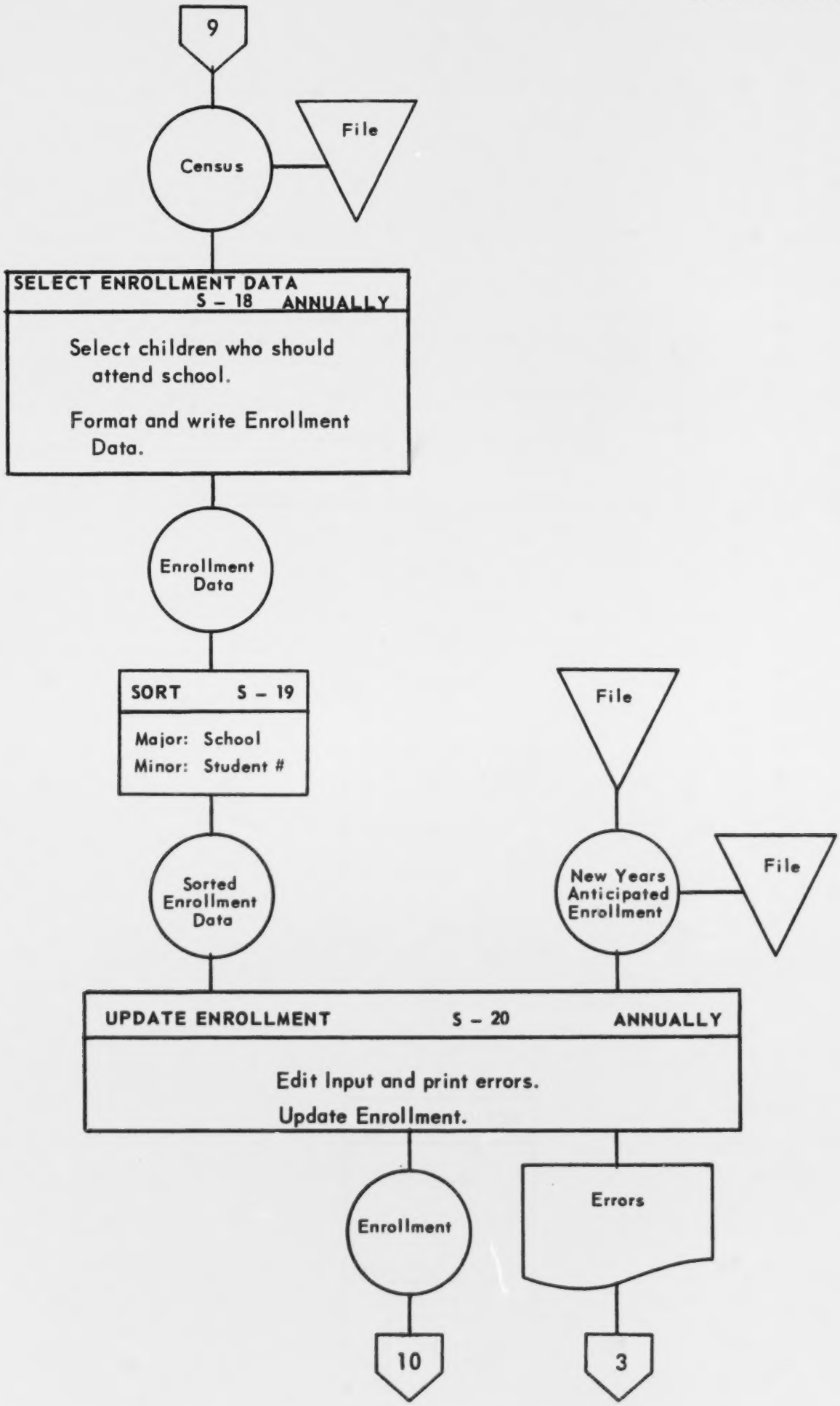

File
Census
File
CENSUS AUDIT-MAIL S – 5 ANNUALLY
Format Mail Audit Form
Census Report Data
SORT S – 6
Optional Sequence
Sorted Census Report Data
PRINT WRITER S-7
Print
Mail Audit Form
Mailed to Residents
5

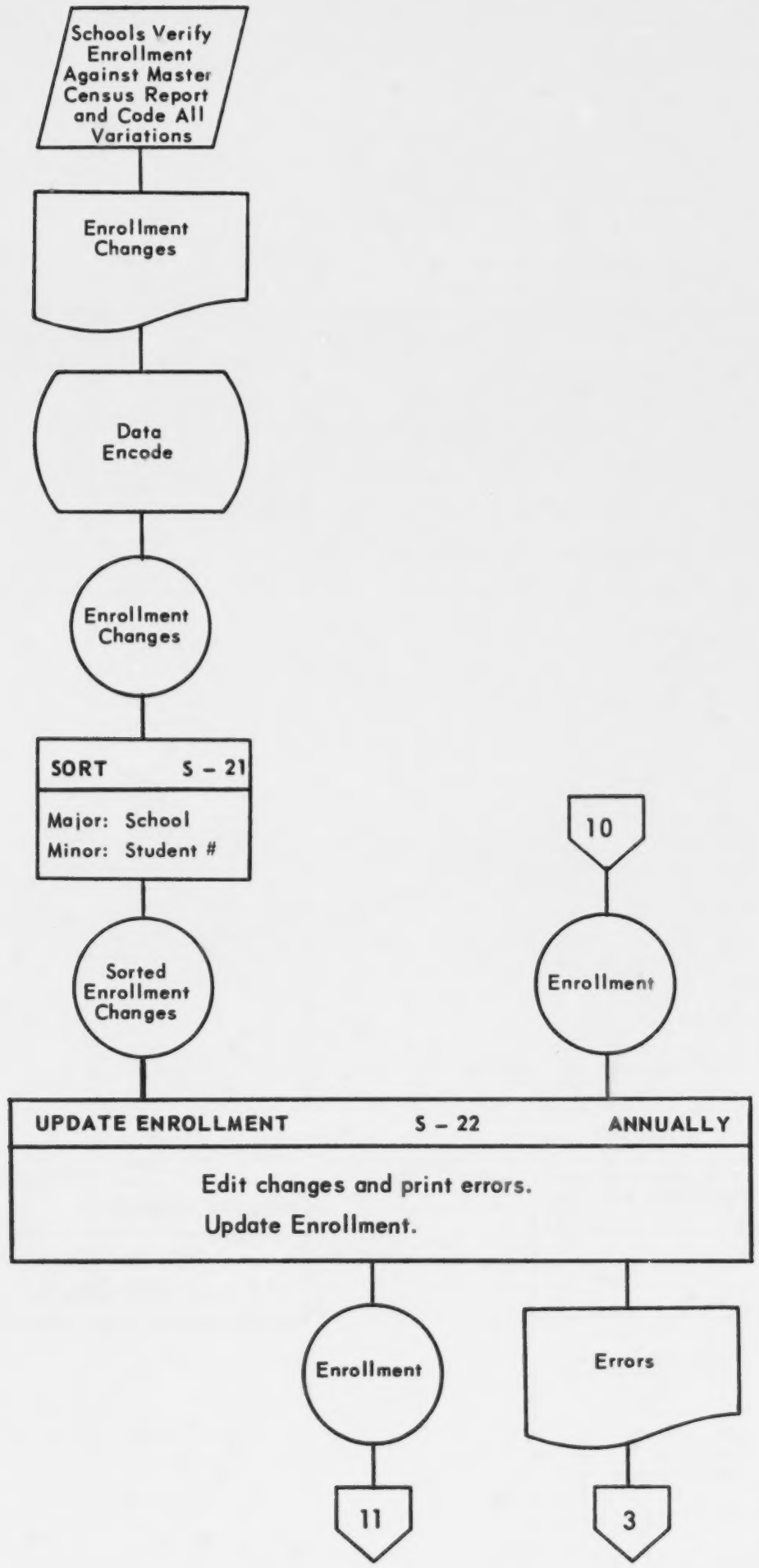

5
Mail Audit Form
Corrected by Residents
Mailed to Center
Data Encode
Census Changes
SORT S-8
Major: Family #
Minor: Date
Sorted Census Changes
File
Census
CENSUS UPDATE S-9 ANNUALLY
Edit changes and print errors.
Update Census.
Census
Errors
6
1

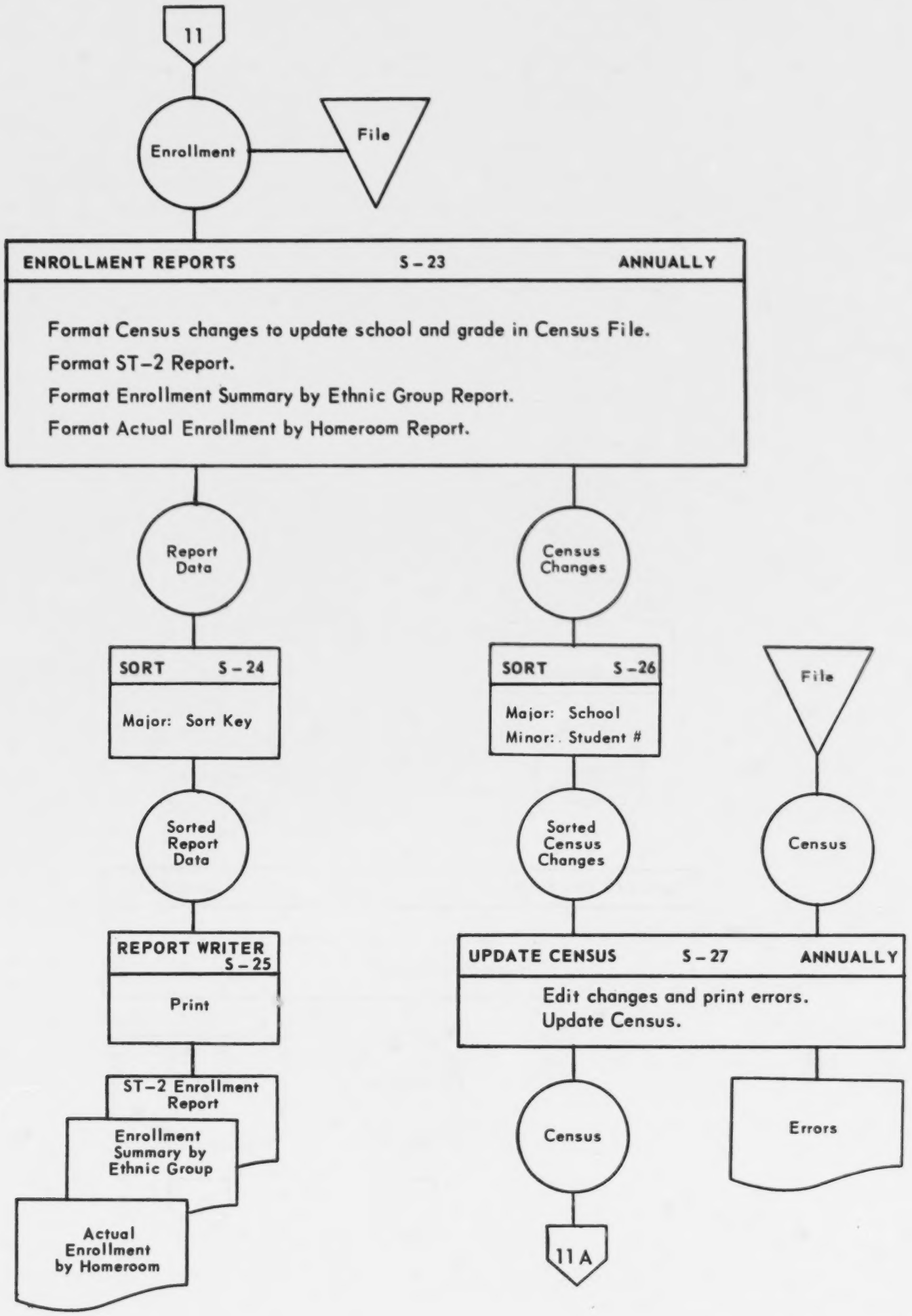

6
Census
File
CENSUS AUDIT-ENUMERATOR S – 10 ANNUALLY
Format enumerator forms for all households who failed to reply to mail audit.
Enumerate Report Data
SORT S – 11
Optional Sequence
Sorted Enumerator Report Data
REPORT WRITER S – 12
Print
Enumerator Forms
7

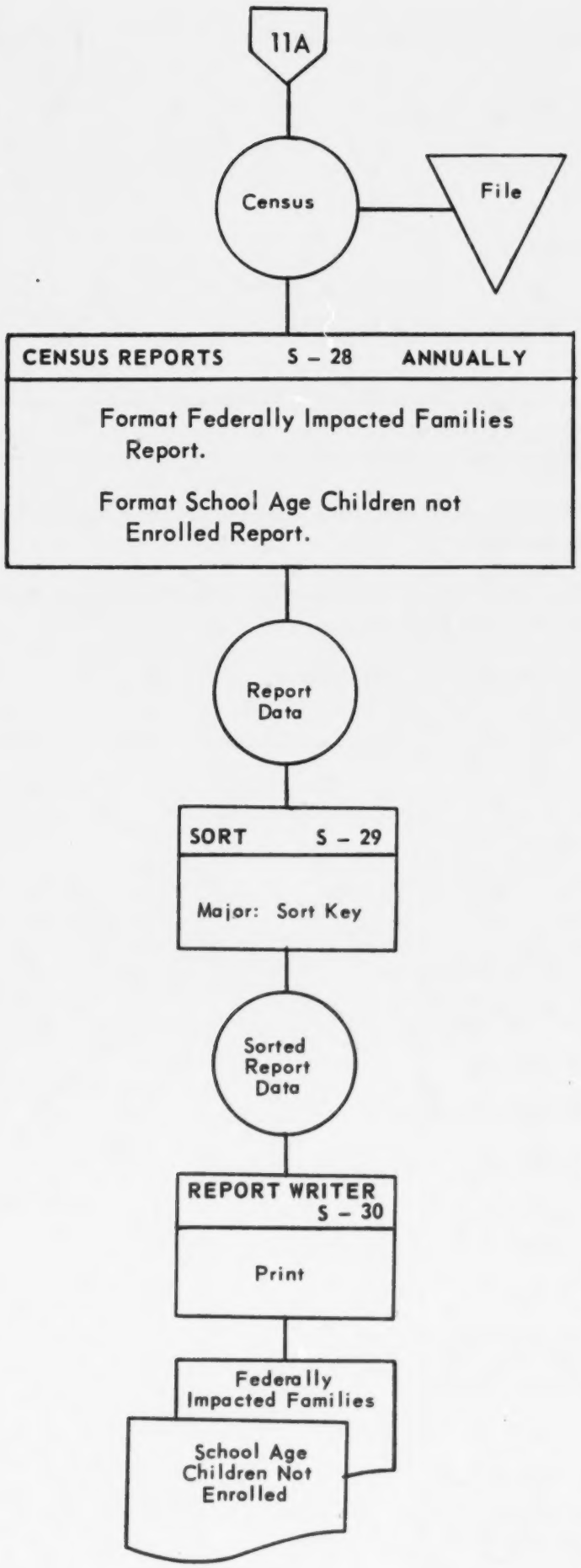

7
Enumerator Forms
Corrected by Census Enumerators
Data Encode
Census Changes
SORT S – 13
Major: Family #
Sorted Census Changes
File
Census
CENSUS UPDATE S – 14 ANNUALLY
Edit changes and print errors.
Update Census.
Census
Errors
8
1

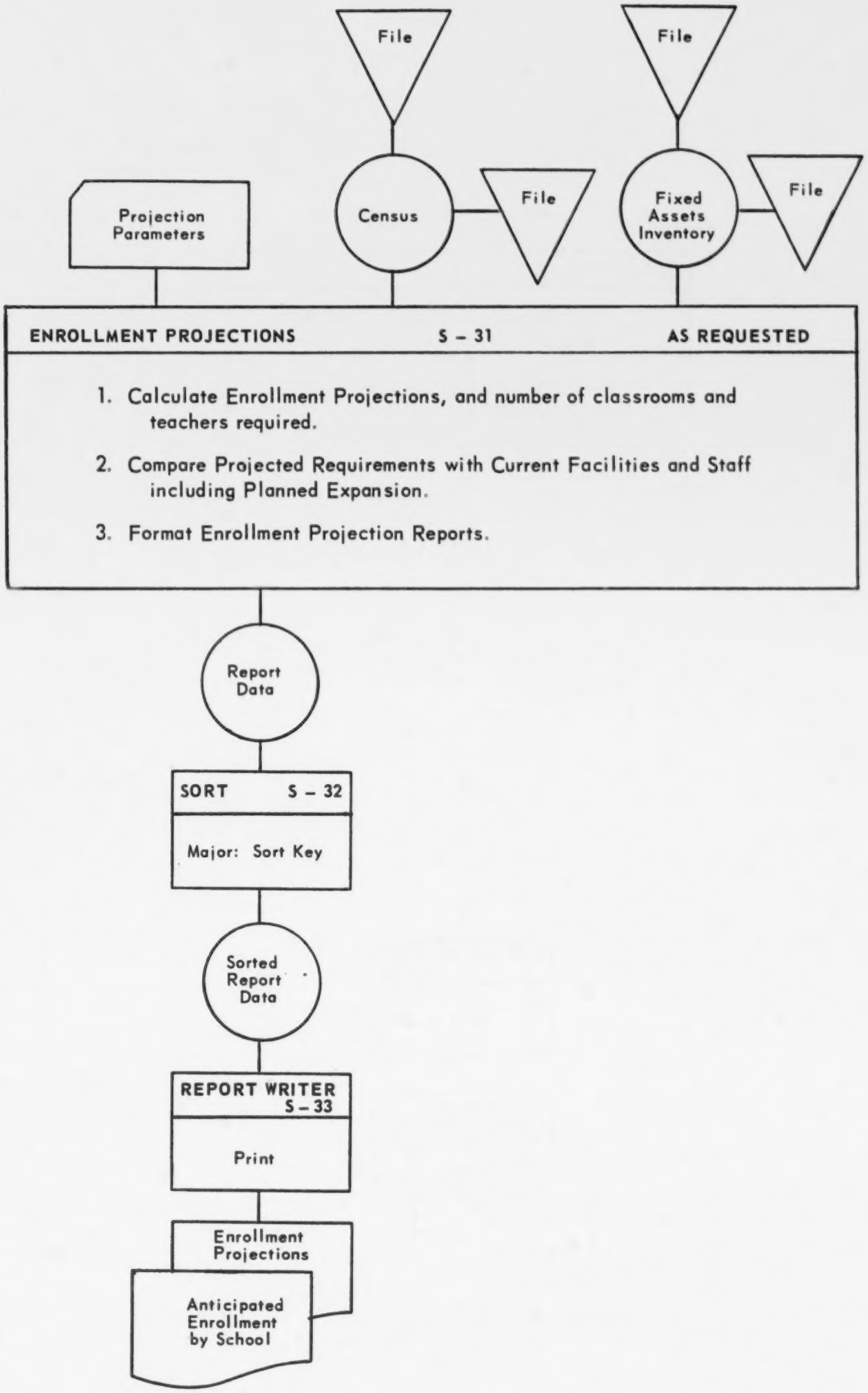

8
Census
9
MASTER CENSUS REPORT S – 15 ANNUALLY
Format Master Census Report.
Format Handicapped Children Report.
Report Data
SORT S – 16
Major: Sort Key
Sorted Report Data
REPORT WRITER S – 17
Print
Handicapped Children
Master Census Report

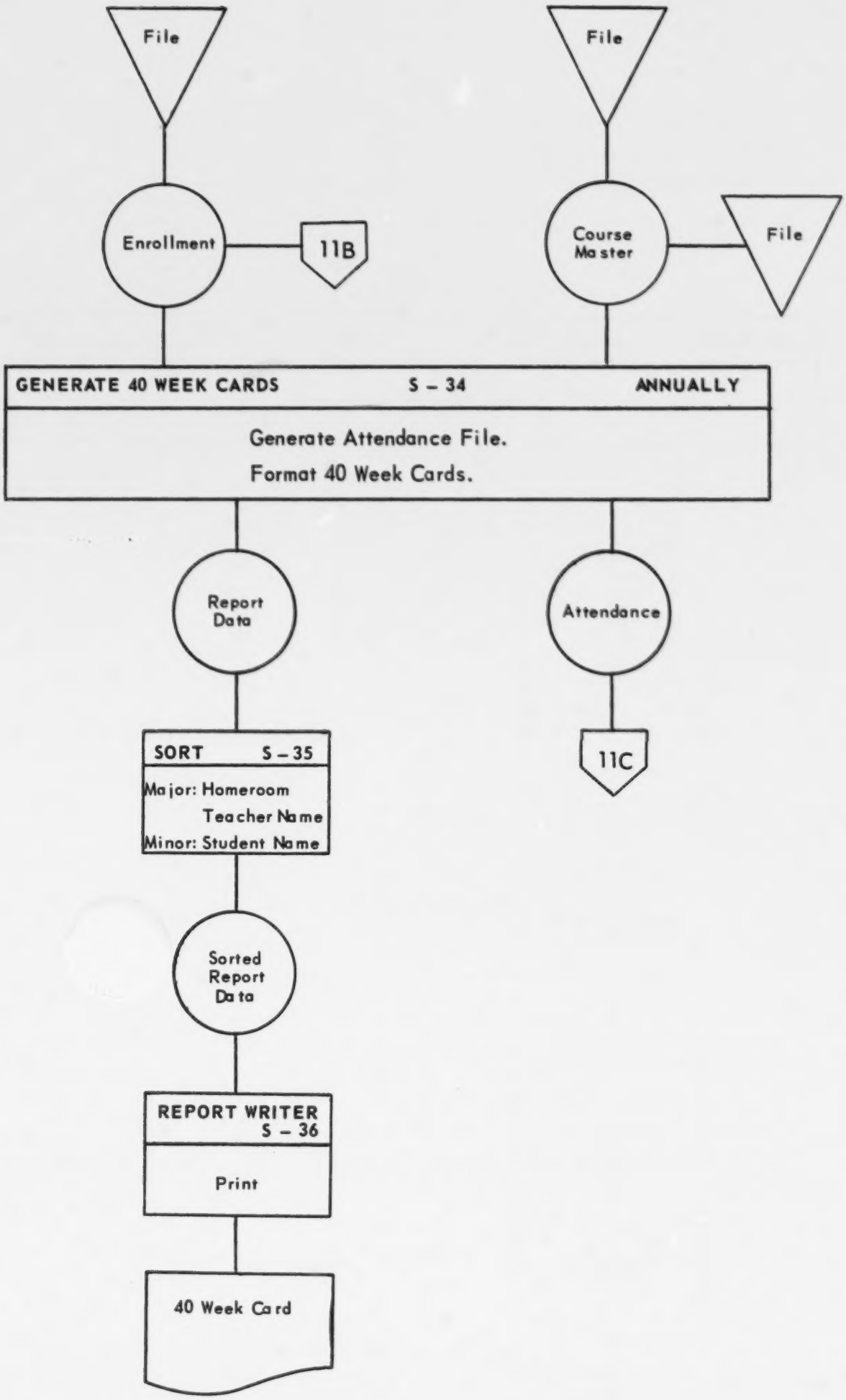

9
Census
File
SELECT ENROLLMENT DATA
S – 18 ANNUALLY
Select children who should attend school.
Format and write Enrollment Data.
Enrollment Data
SORT S – 19
Major: School
Minor: Student #
File
Sorted Enrollment Data
New Years Anticipated Enrollment
File
UPDATE ENROLLMENT S – 20 ANNUALLY
Edit Input and print errors.
Update Enrollment.
Enrollment
Errors
10
3

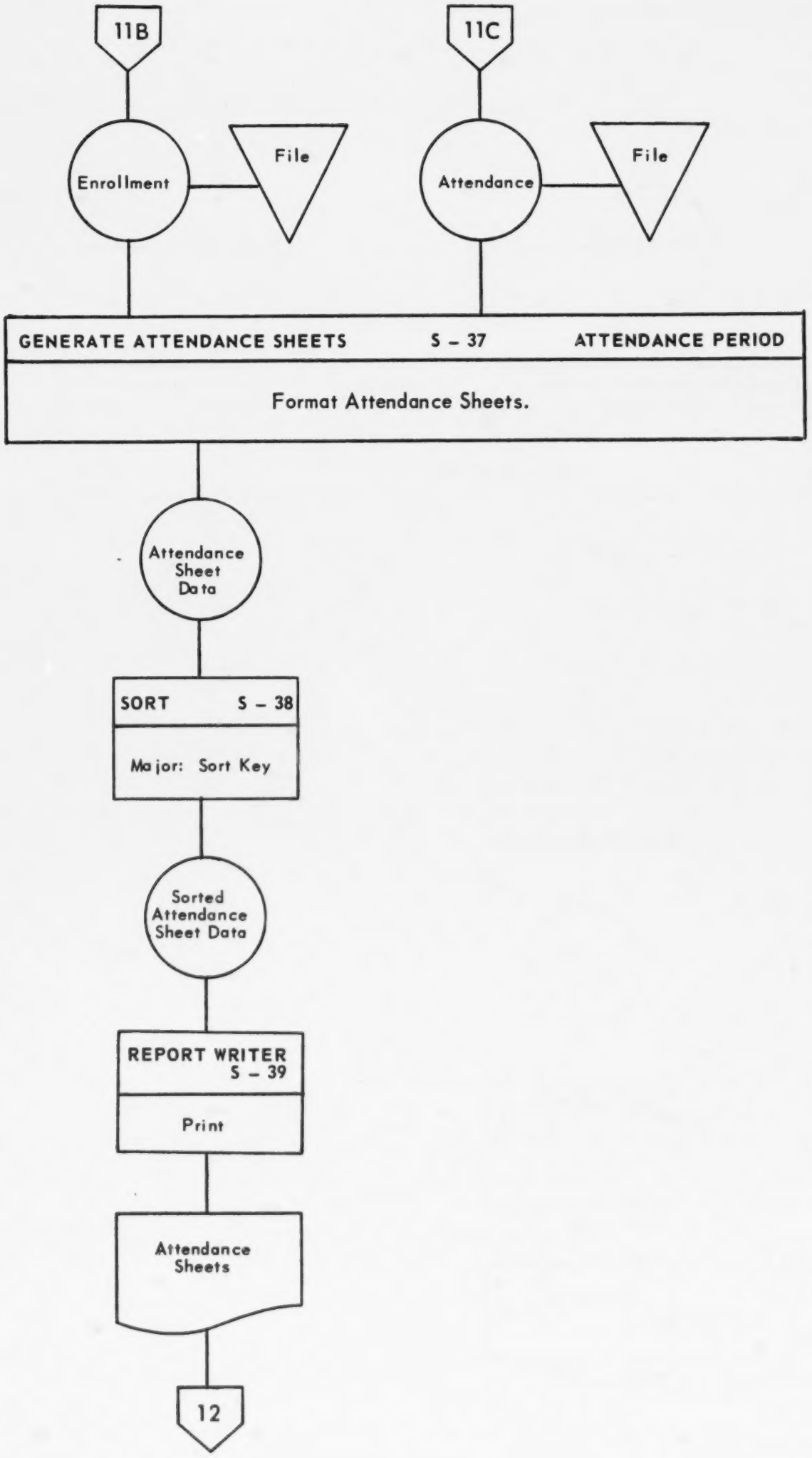

Schools Verify Enrollment Against Master Census Report and Code All Variations
Enrollment Changes
Data Encode
Enrollment Changes
SORT S – 21
Major: School
Minor: Student #
Sorted Enrollment Changes
10
Enrollment
UPDATE ENROLLMENT S – 22 ANNUALLY
Edit changes and print errors.
Update Enrollment.
Enrollment
Errors
11
3

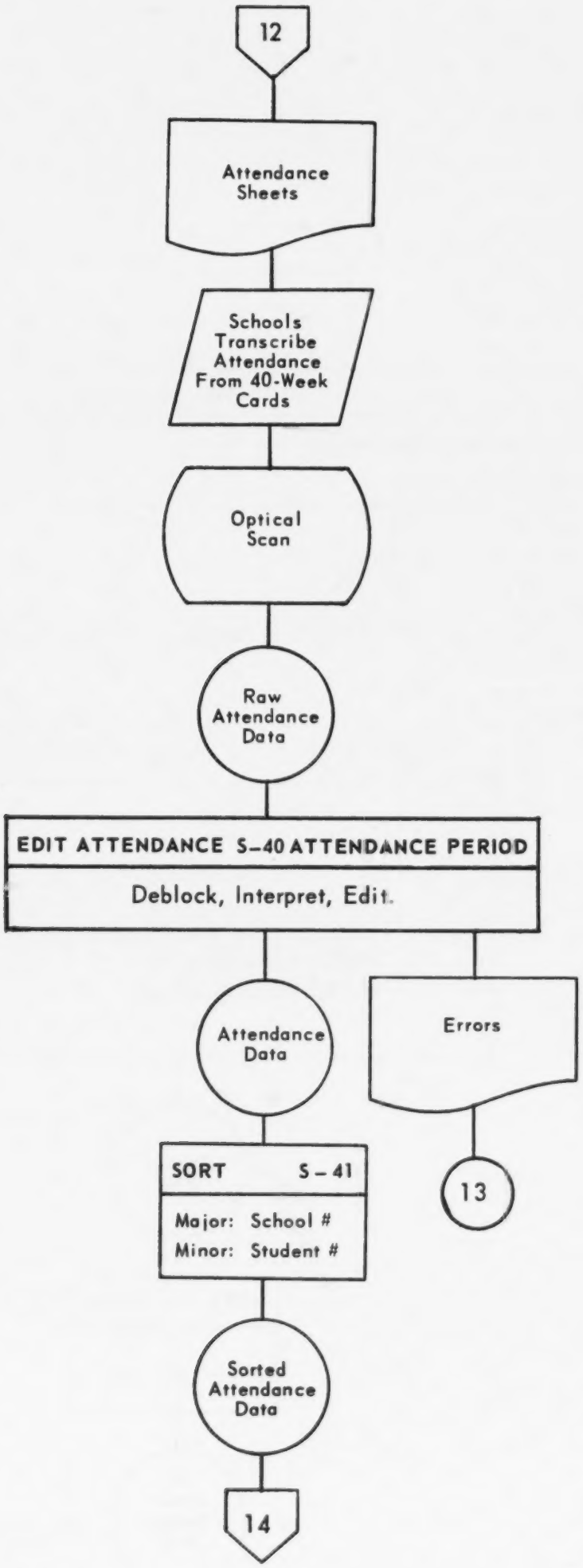

11
Enrollment
File
ENROLLMENT REPORTS S-23 ANNUALLY
Format Census changes to update school and grade in Census File.
Format ST-2 Report.
Format Enrollment Summary by Ethnic Group Report.
Format Actual Enrollment by Homeroom Report.
Report Data
Census Changes
SORT S-24
Major: Sort Key
SORT S-26
Major: School
Minor: Student #
File
Sorted Report Data
Sorted Census Changes
Census
REPORT WRITER S-25
Print
UPDATE CENSUS S-27 ANNUALLY
Edit changes and print errors.
Update Census.
ST-2 Enrollment Report
Enrollment Summary by Ethnic Group
Actual Enrollment by Homeroom
Census
Errors
11A

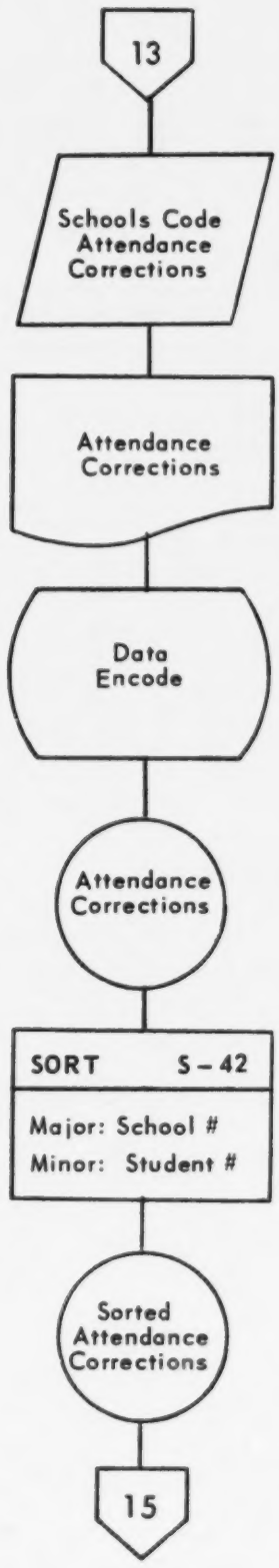

11A
Census
File
CENSUS REPORTS S – 28 ANNUALLY
Format Federally Impacted Families Report.
Format School Age Children not Enrolled Report.
Report Data
SORT S – 29
Major: Sort Key
Sorted Report Data
REPORT WRITER S – 30
Print
Federally Impacted Families
School Age Children Not Enrolled

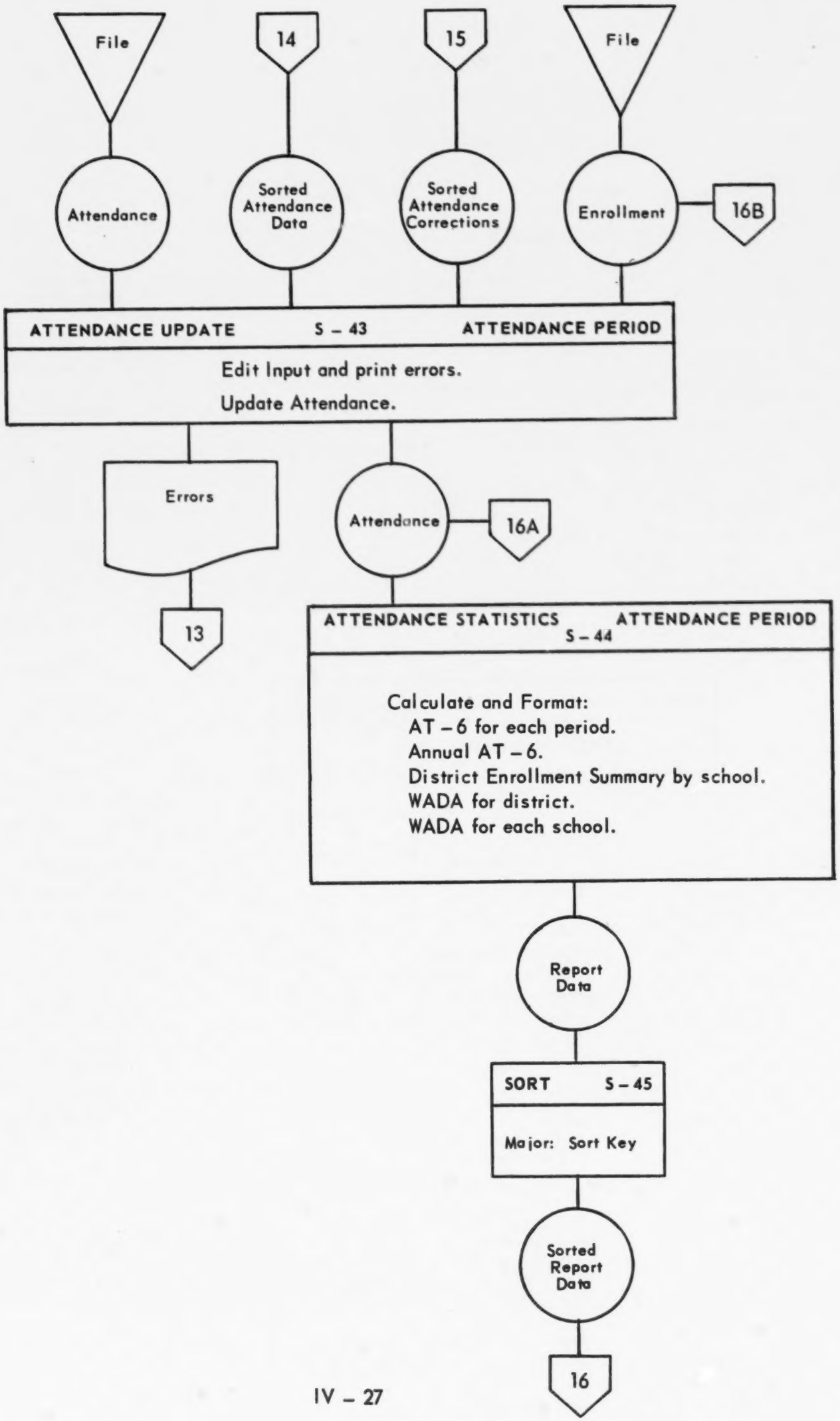

File
File
Projection Parameters
Census
File
Fixed Assets Inventory
File
ENROLLMENT PROJECTIONS
S – 31
AS REQUESTED
1. Calculate Enrollment Projections, and number of classrooms and teachers required.
2. Compare Projected Requirements with Current Facilities and Staff including Planned Expansion.
3. Format Enrollment Projection Reports.
Report Data
SORT
S – 32
Major: Sort Key
Sorted Report Data
REPORT WRITER
S – 33
Print
Enrollment Projections
Anticipated Enrollment by School

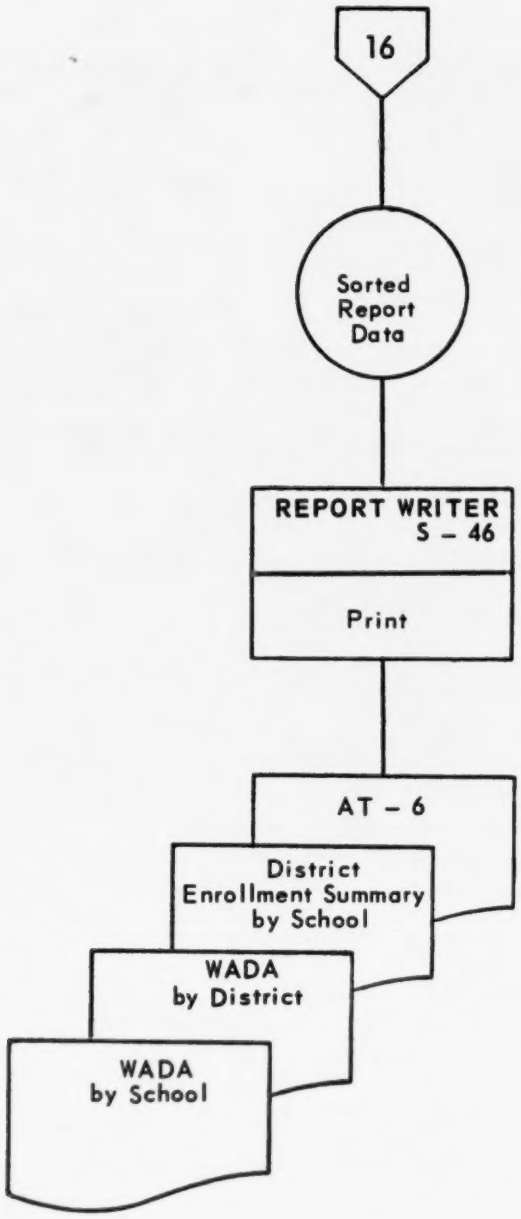

File
File
Enrollment
11B
Course Master
File
GENERATE 40 WEEK CARDS
S – 34
ANNUALLY
Generate Attendance File.
Format 40 Week Cards.
Report Data
Attendance
11C
SORT
S – 35
Major: Homeroom
Teacher Name
Minor: Student Name
Sorted Report Data
REPORT WRITER
S – 36
Print
40 Week Card

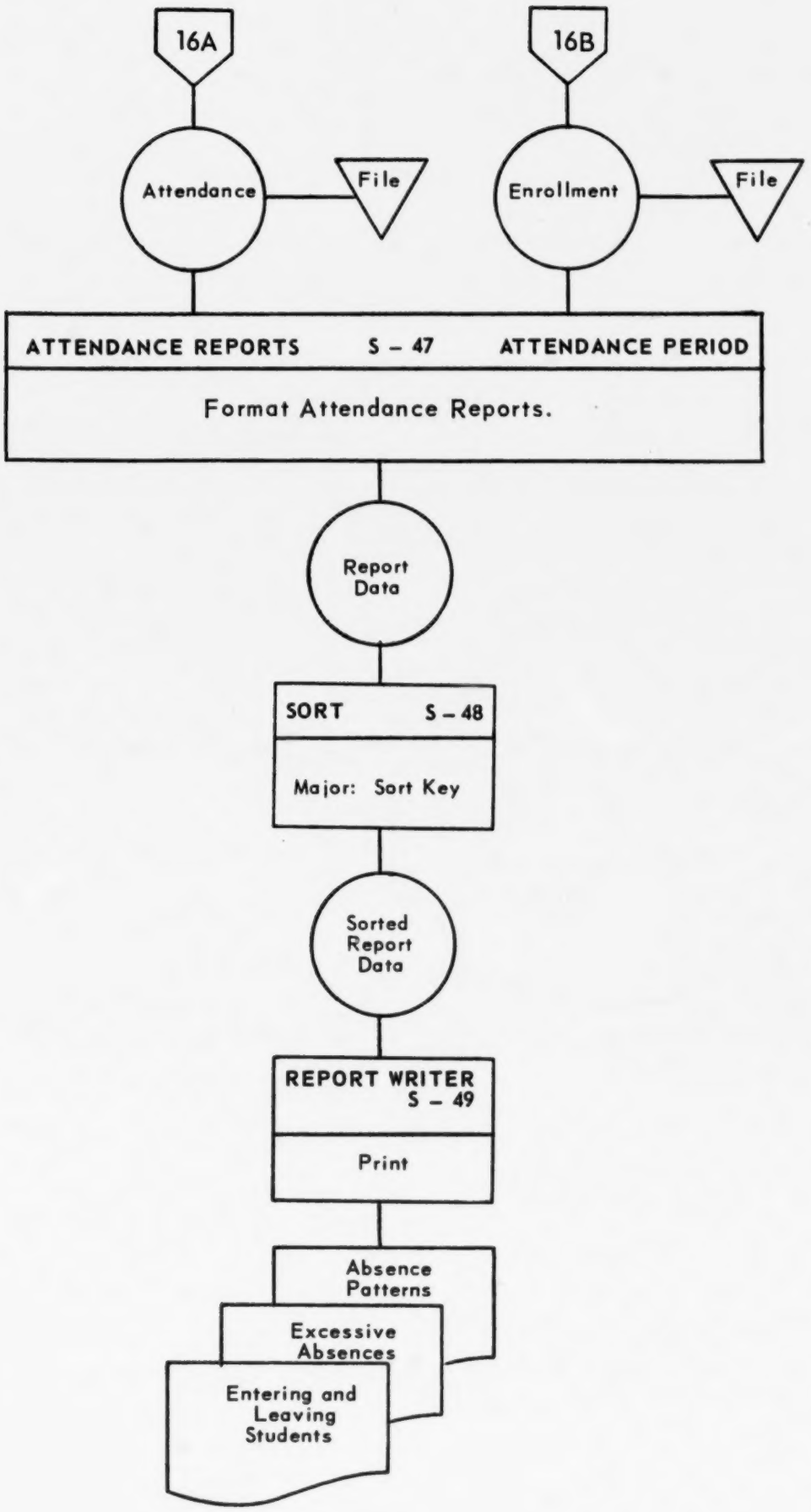

11B
11C
Enrollment
File
Attendance
File
GENERATE ATTENDANCE SHEETS
S – 37
ATTENDANCE PERIOD
Format Attendance Sheets.
Attendance Sheet Data
SORT
S – 38
Major: Sort Key
Sorted Attendance Sheet Data
REPORT WRITER
S – 39
Print
Attendance Sheets
12

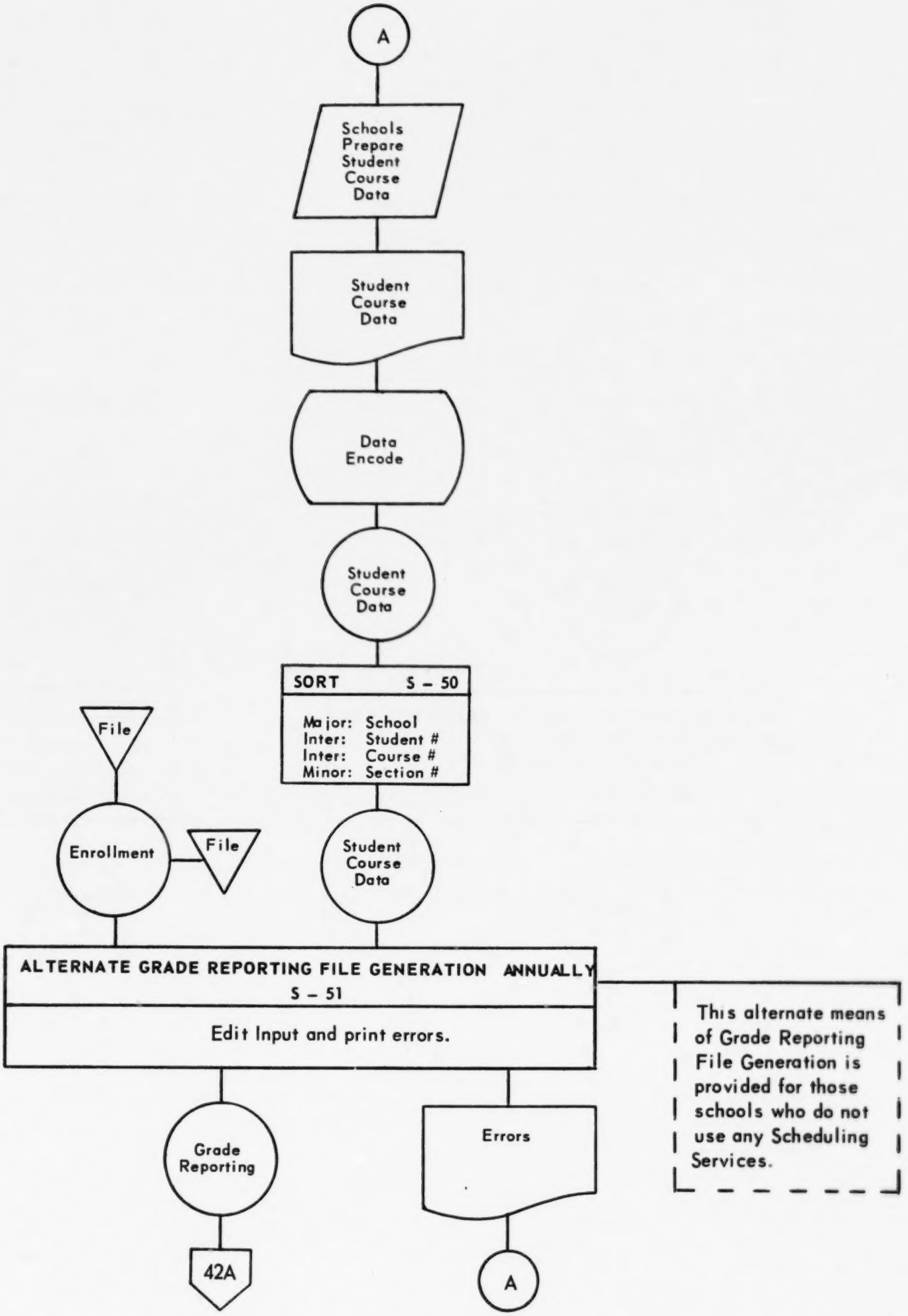

12
Attendance Sheets
Schools Transcribe Attendance From 40-Week Cards
Optical Scan
Raw Attendance Data
EDIT ATTENDANCE S-40 ATTENDANCE PERIOD
Deblock, Interpret, Edit.
Attendance Data
Errors
SORT S-41
Major: School #
Minor: Student #
13
Sorted Attendance Data
14

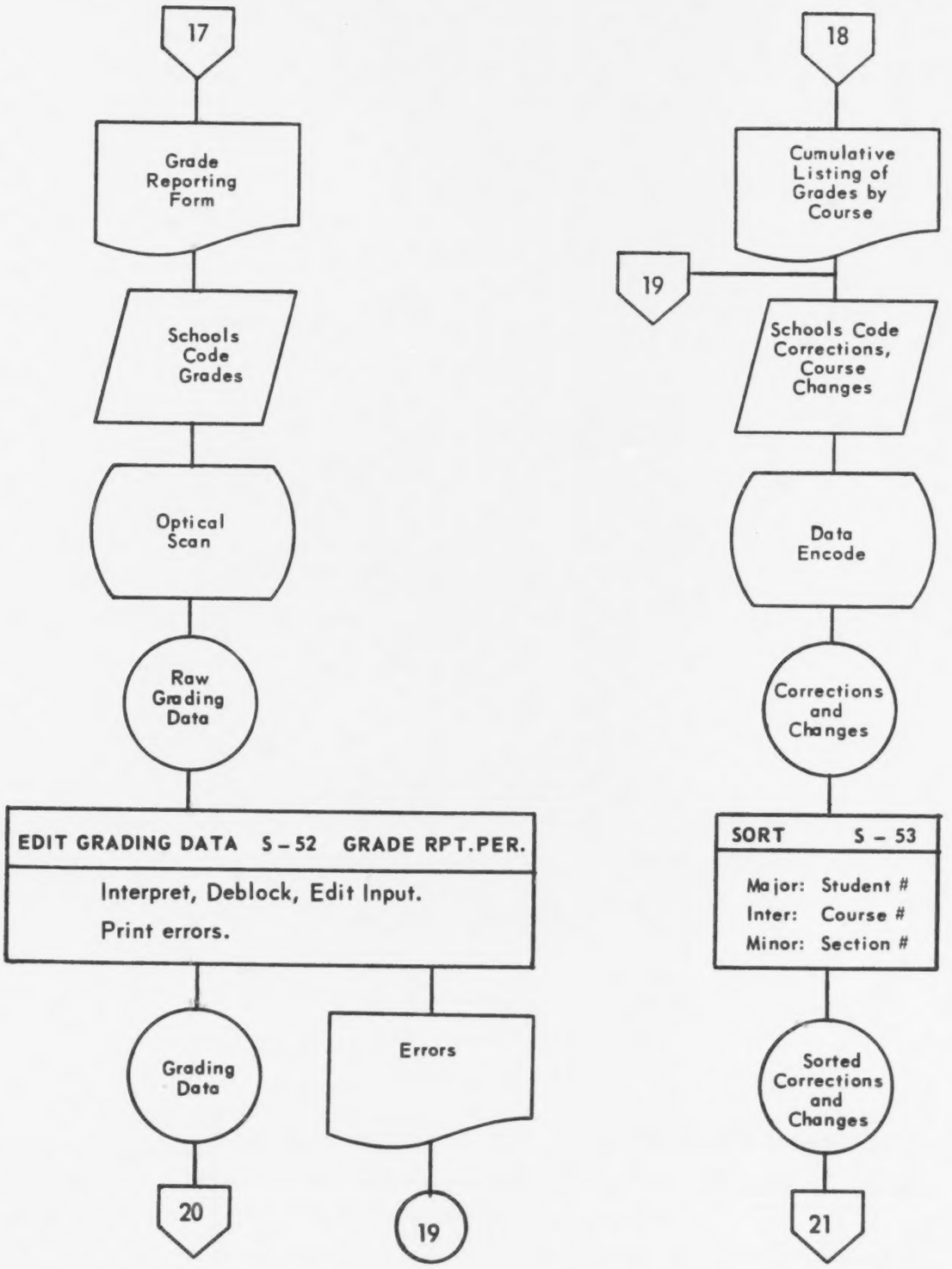

13
Schools Code Attendance Corrections
Attendance Corrections
Data Encode
Attendance Corrections
SORT S-42
Major: School #
Minor: Student #
Sorted Attendance Corrections
15

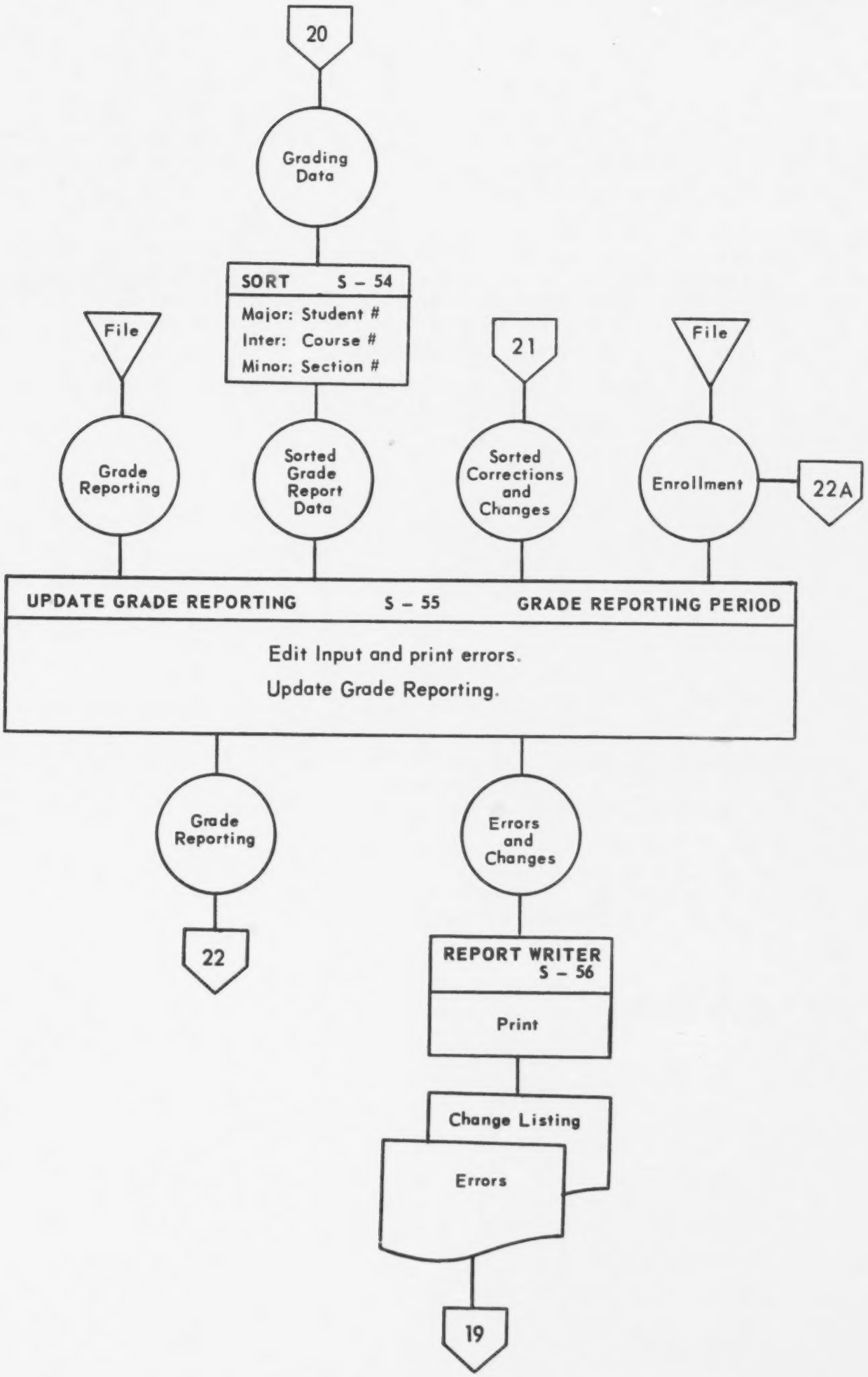

File
14
15
File
Attendance
Sorted Attendance Data
Sorted Attendance Corrections
Enrollment
16B
ATTENDANCE UPDATE
S – 43
ATTENDANCE PERIOD
Edit Input and print errors.
Update Attendance.
Errors
Attendance
16A
13
ATTENDANCE STATISTICS
S – 44
ATTENDANCE PERIOD
Calculate and Format:
AT – 6 for each period.
Annual AT – 6.
District Enrollment Summary by school.
WADA for district.
WADA for each school.
Report Data
SORT
S – 45
Major: Sort Key
Sorted Report Data
16

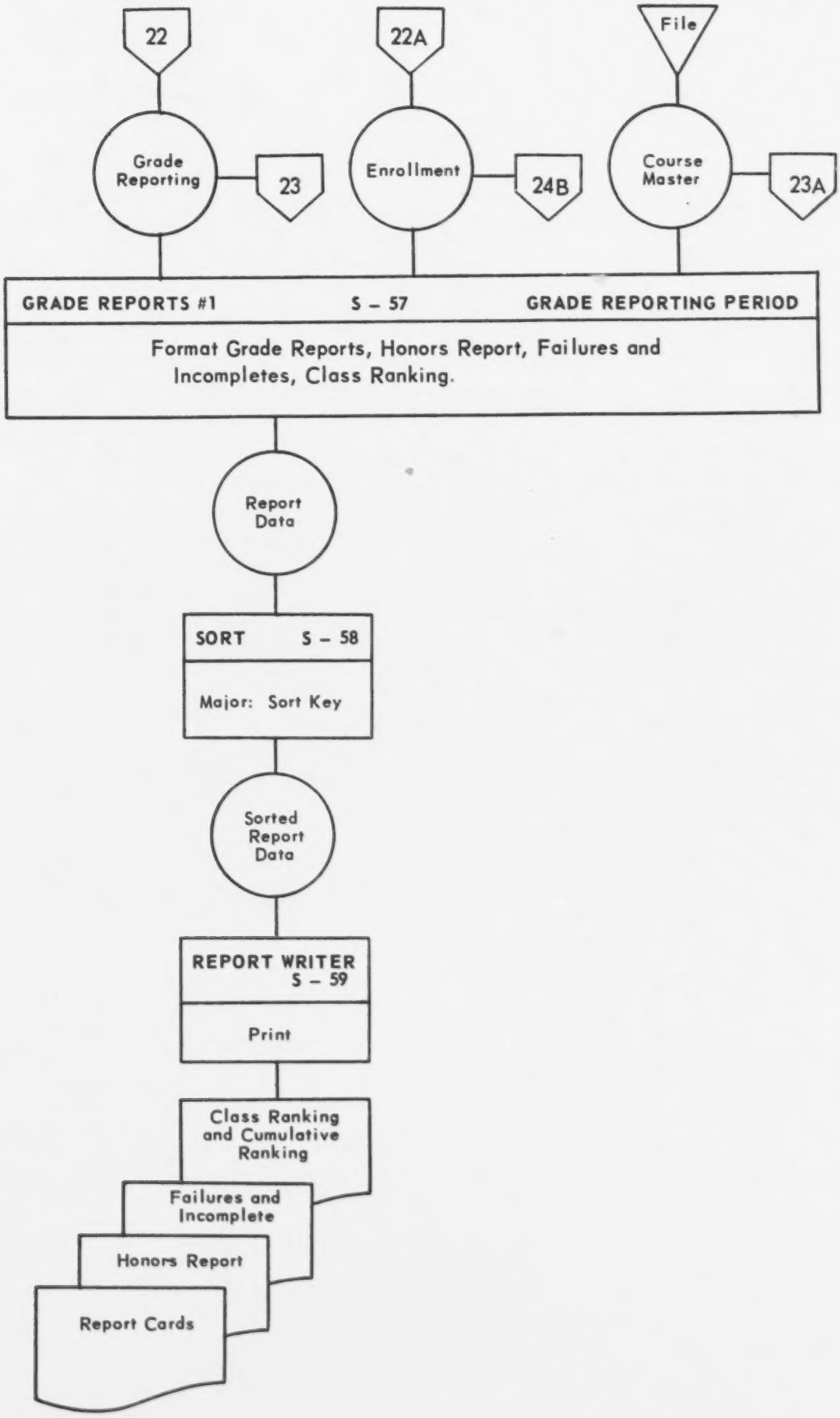

16
Sorted Report Data
REPORT WRITER S – 46
Print
AT – 6
District Enrollment Summary by School
WADA by District
WADA by School

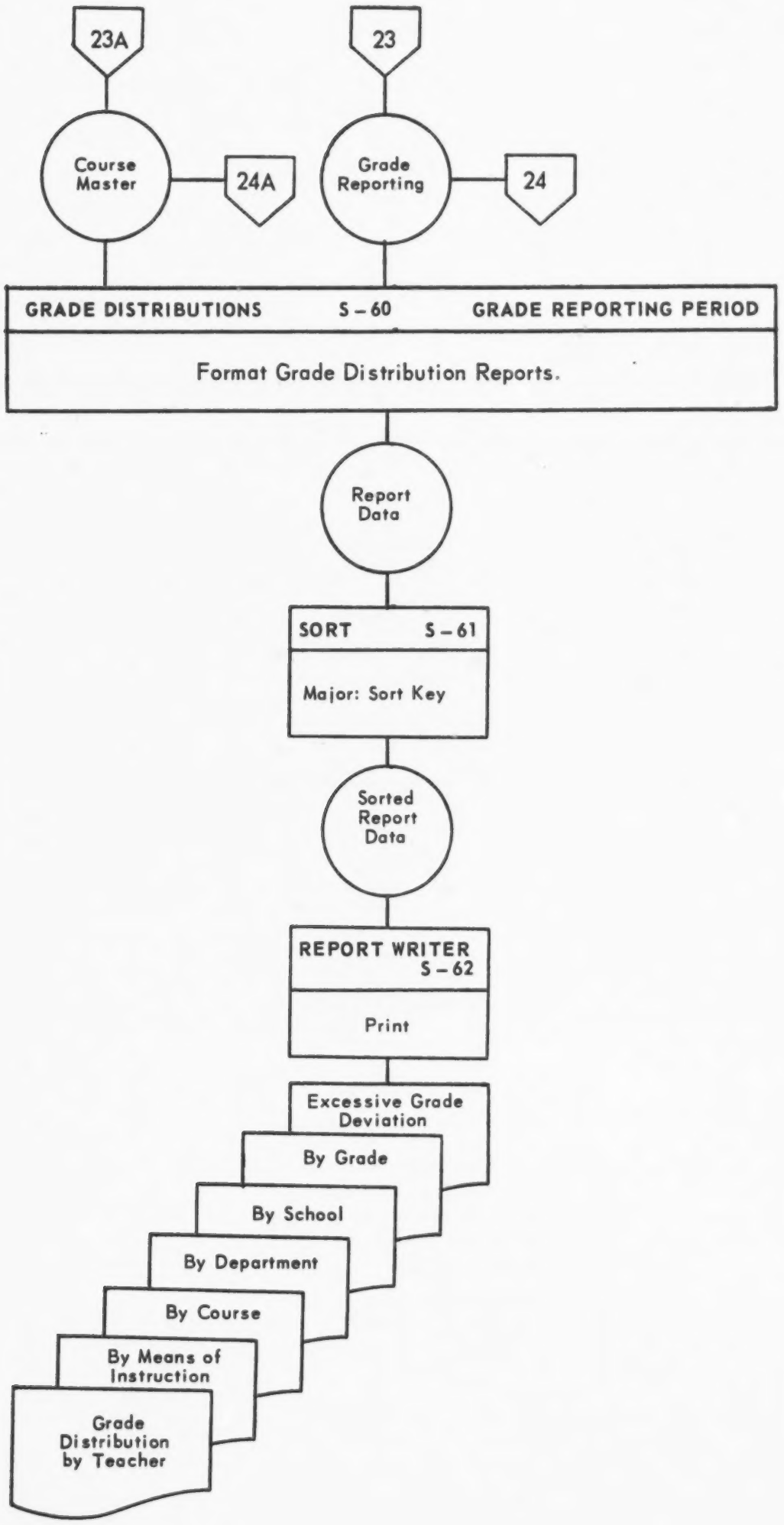

16A
16B
Attendance
File
Enrollment
File
ATTENDANCE REPORTS S – 47 ATTENDANCE PERIOD
Format Attendance Reports.
Report Data
SORT S – 48
Major: Sort Key
Sorted Report Data
REPORT WRITER S – 49
Print
Absence Patterns
Excessive Absences
Entering and Leaving Students

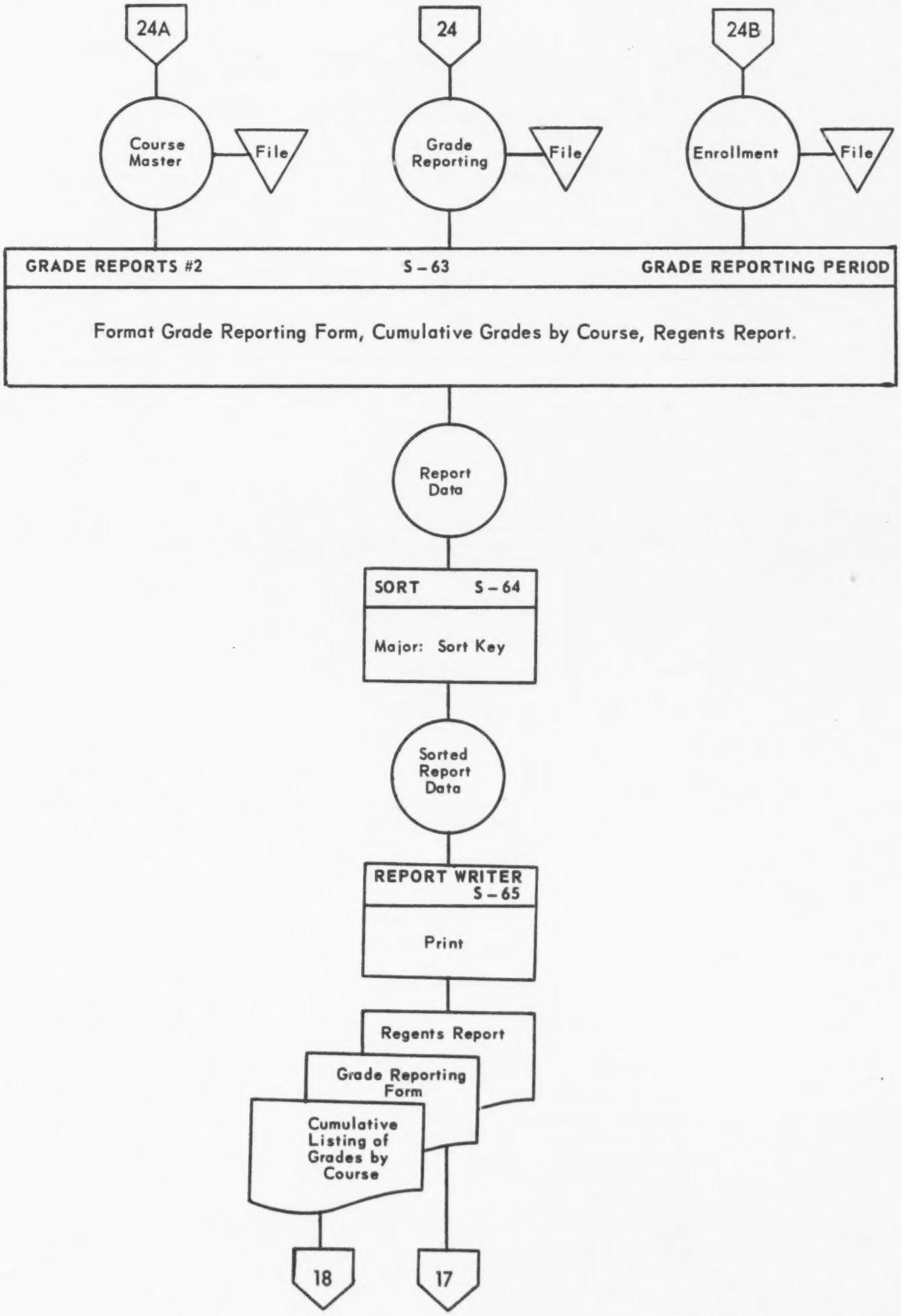

A
Schools Prepare Student Course Data
Student Course Data
Data Encode
Student Course Data
SORT S – 50
Major: School
Inter: Student #
Inter: Course #
Minor: Section #
File
Enrollment
File
Student Course Data
ALTERNATE GRADE REPORTING FILE GENERATION ANNUALLY
S – 51
Edit Input and print errors.
This alternate means of Grade Reporting File Generation is provided for those schools who do not use any Scheduling Services.
Grade Reporting
Errors
42A
A


17
Grade Reporting Form
Schools Code Grades
Optical Scan
Raw Grading Data
EDIT GRADING DATA S – 52 GRADE RPT.PER.
Interpret, Deblock, Edit Input.
Print errors.
Grading Data
Errors
20
19
18
Cumulative Listing of Grades by Course
19
Schools Code Corrections, Course Changes
Data Encode
Corrections and Changes
SORT S – 53
Major: Student #
Inter: Course #
Minor: Section #
Sorted Corrections and Changes
21

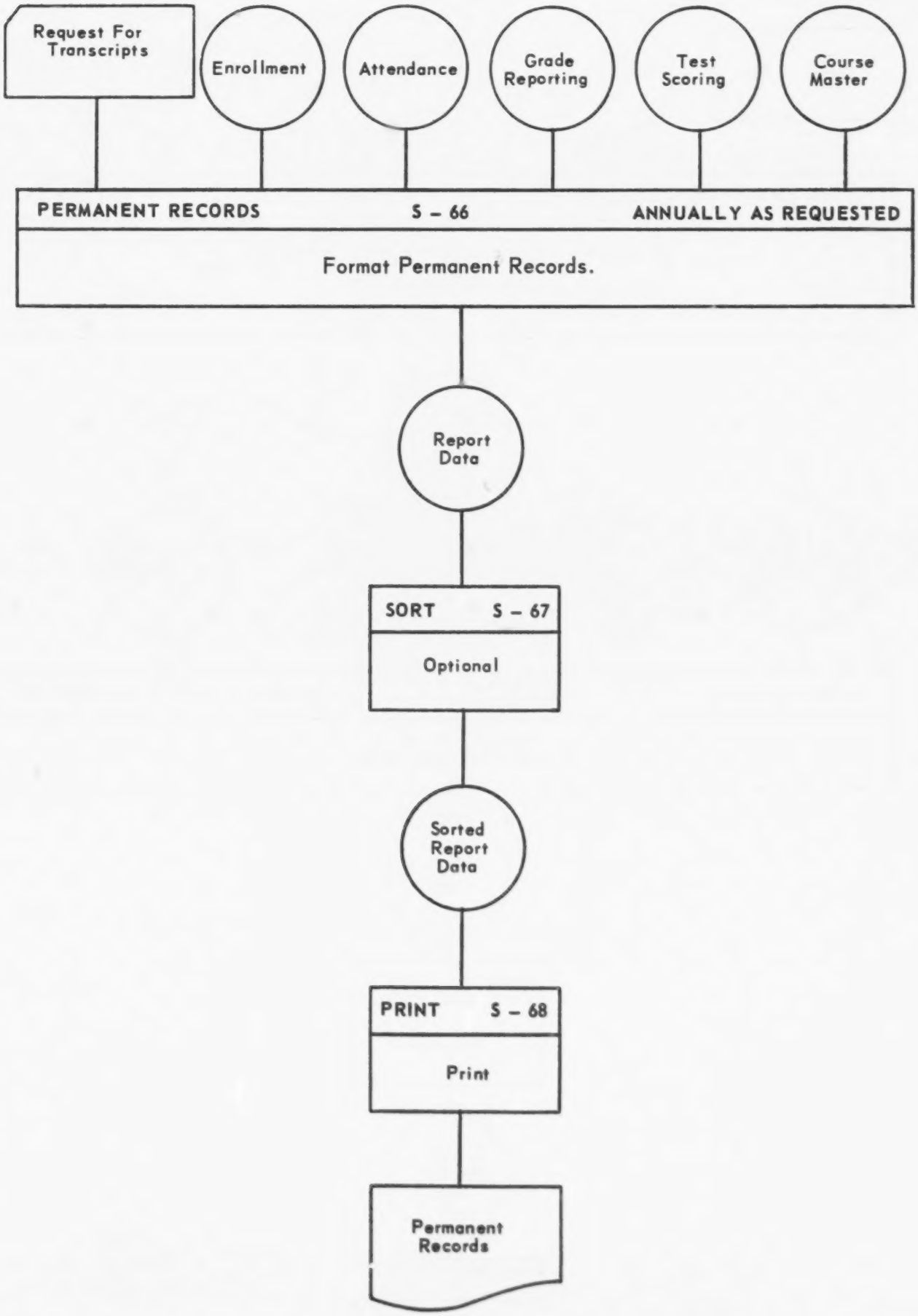

20
Grading Data
SORT S – 54
Major: Student #
Inter: Course #
Minor: Section #
File
Grade Reporting
Sorted Grade Report Data
21
Sorted Corrections and Changes
File
Enrollment
22A
UPDATE GRADE REPORTING S – 55 GRADE REPORTING PERIOD
Edit Input and print errors.
Update Grade Reporting.
Grade Reporting
22
Errors and Changes
REPORT WRITER S – 56
Print
Change Listing
Errors
19

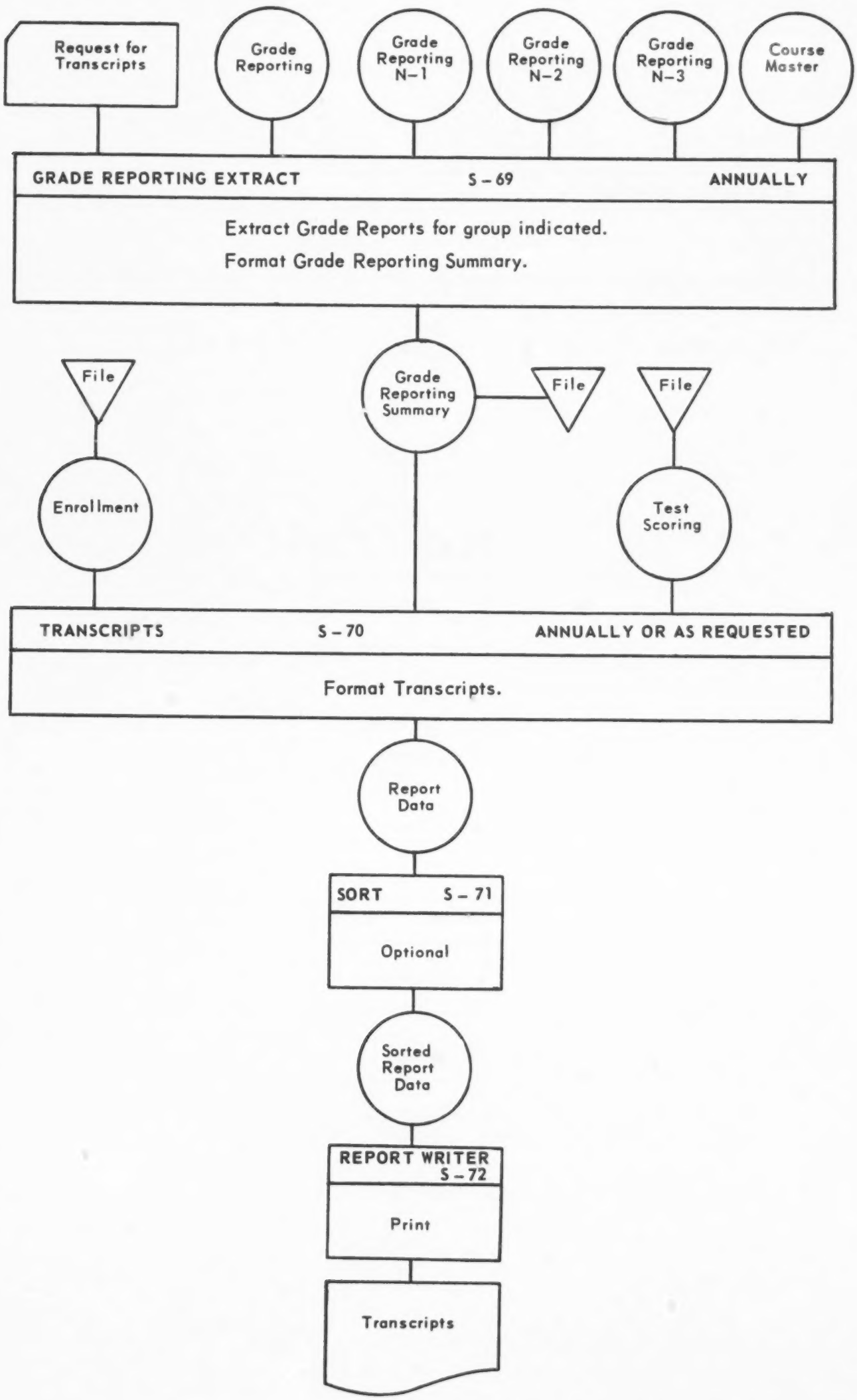

22
22A
File
Grade Reporting
23
Enrollment
24B
Course Master
23A
GRADE REPORTS #1
S – 57
GRADE REPORTING PERIOD
Format Grade Reports, Honors Report, Failures and Incompletes, Class Ranking.
Report Data
SORT
S – 58
Major: Sort Key
Sorted Report Data
REPORT WRITER
S – 59
Print
Class Ranking and Cumulative Ranking
Failures and Incomplete
Honors Report
Report Cards

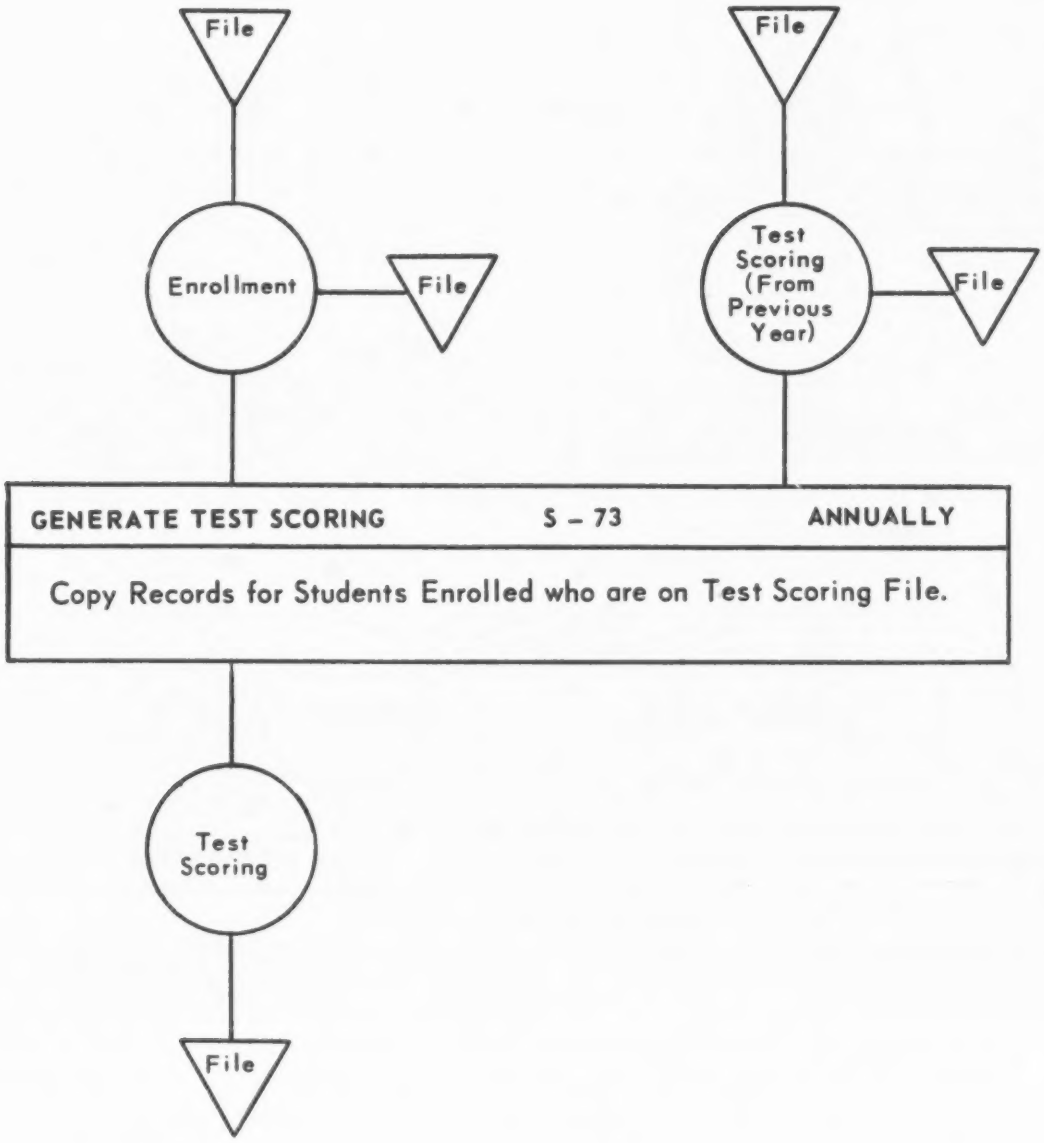

23A
23
Course Master
24A
Grade Reporting
24
GRADE DISTRIBUTIONS S – 60 GRADE REPORTING PERIOD
Format Grade Distribution Reports.
Report Data
SORT S – 61
Major: Sort Key
Sorted Report Data
REPORT WRITER S – 62
Print
Excessive Grade Deviation
By Grade
By School
By Department
By Course
By Means of Instruction
Grade Distribution by Teacher

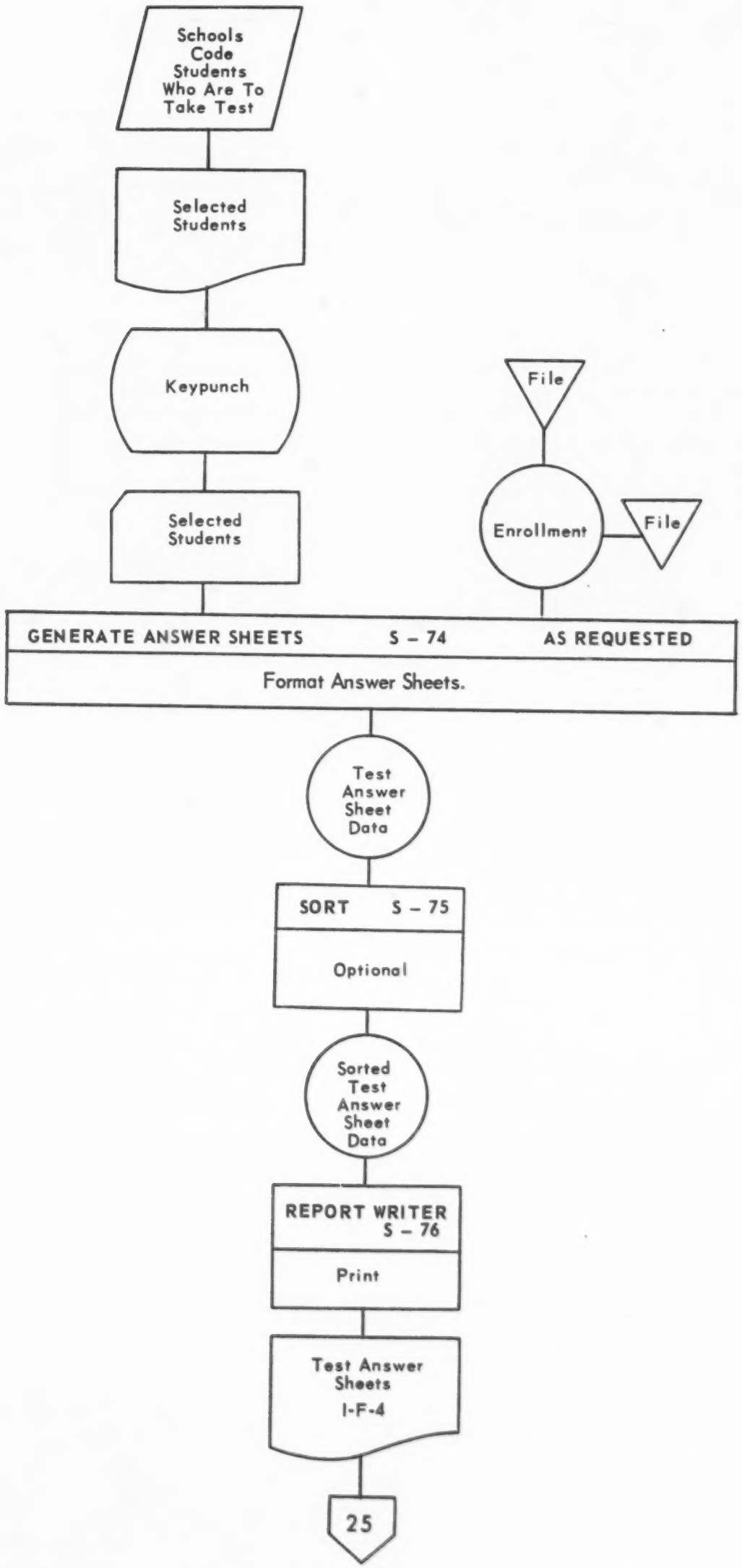

24A
24
24B
Course Master
File
Grade Reporting
File
Enrollment
File
GRADE REPORTS #2
S – 63
GRADE REPORTING PERIOD
Format Grade Reporting Form, Cumulative Grades by Course, Regents Report.
Report Data
SORT S – 64
Major: Sort Key
Sorted Report Data
REPORT WRITER S – 65
Print
Regents Report
Grade Reporting Form
Cumulative Listing of Grades by Course
18
17

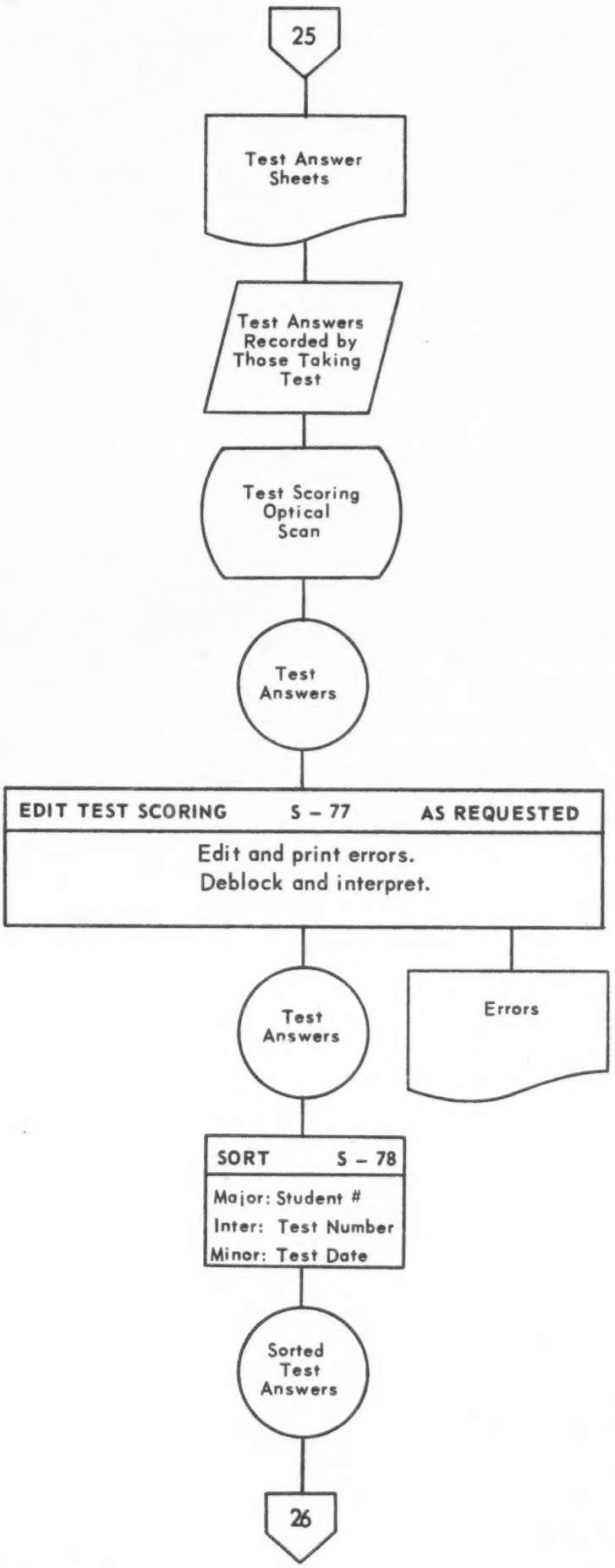
NYSEIS
PERMANENT RECORDS

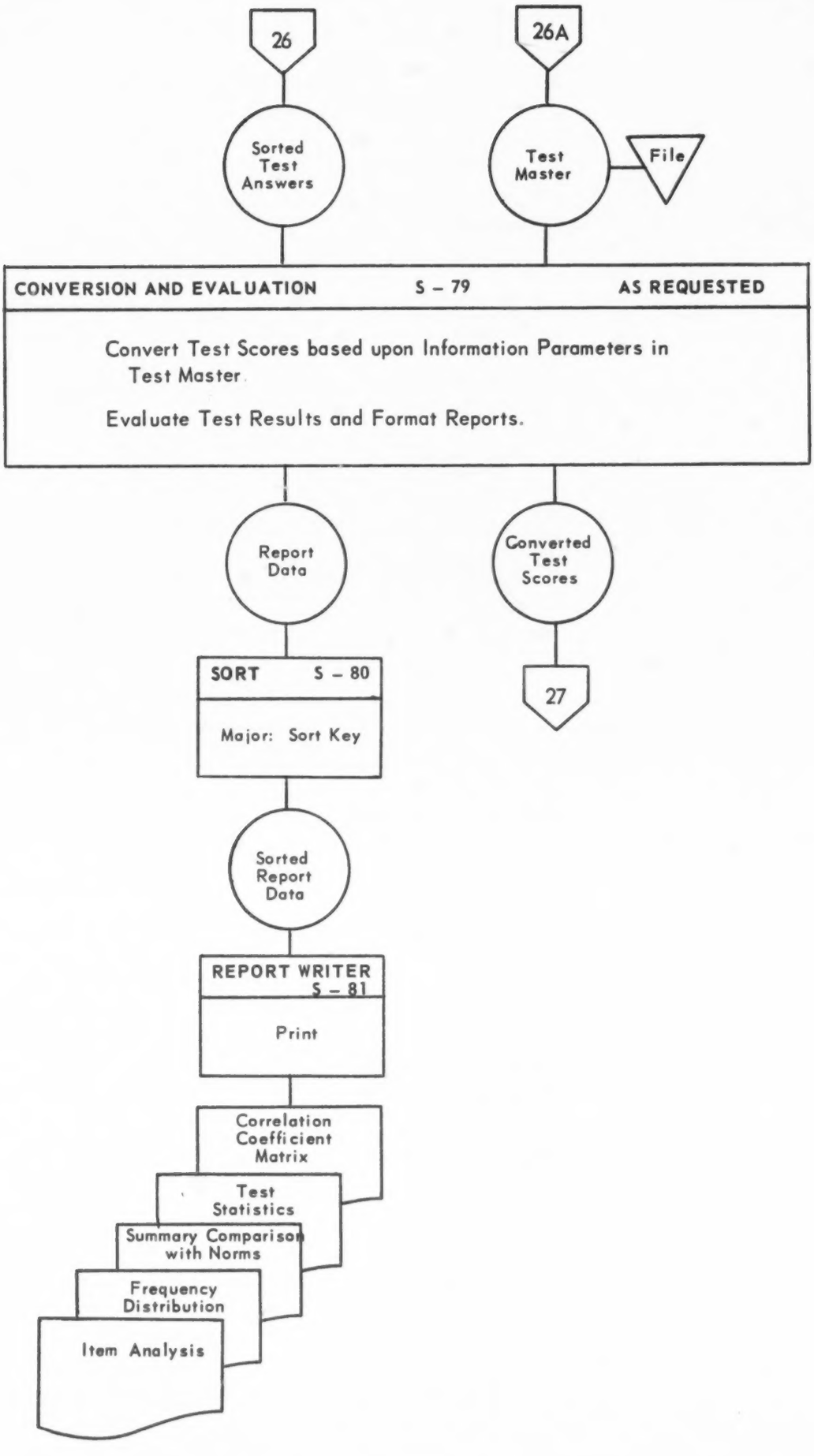


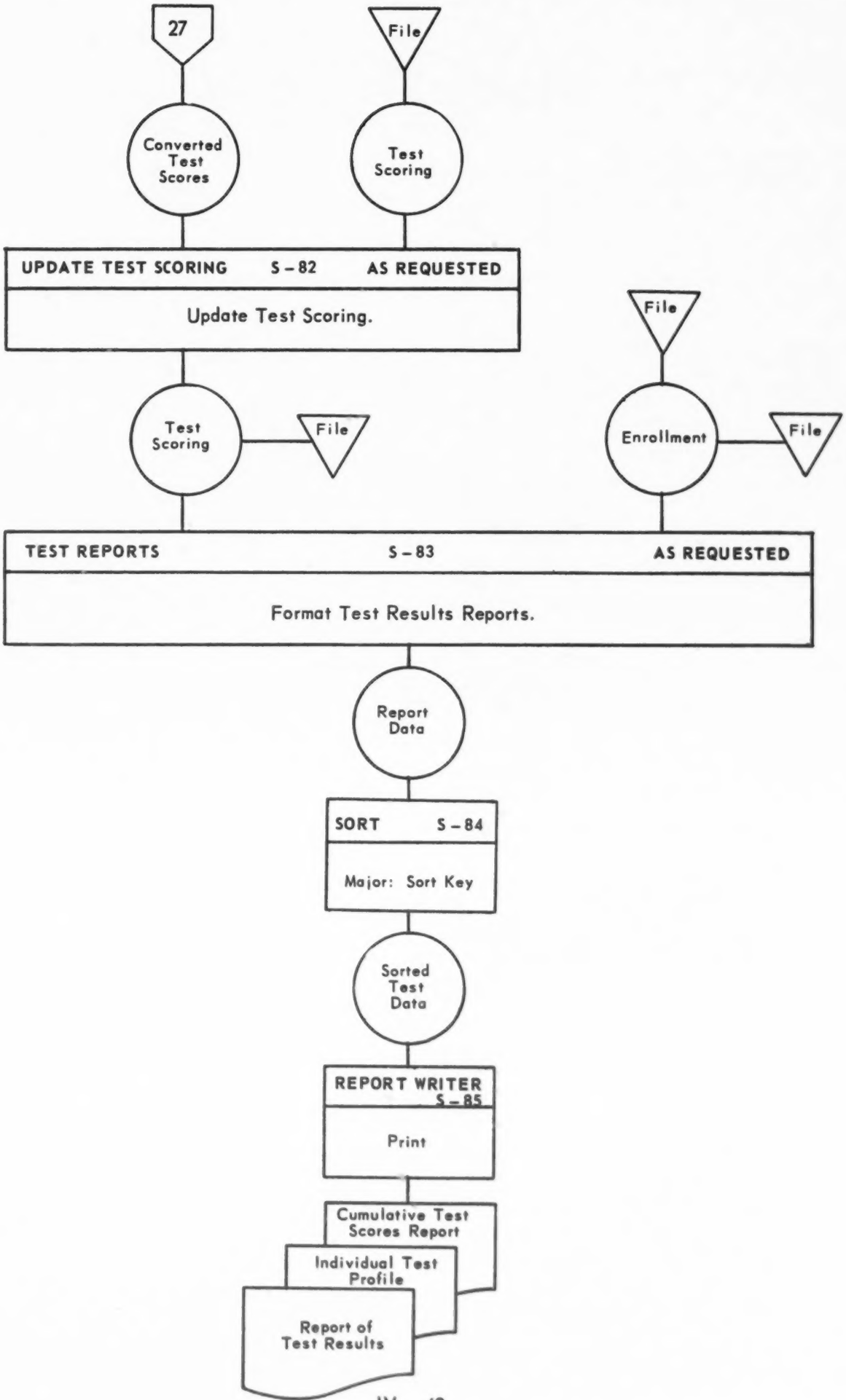

Request for Transcripts
Grade Reporting
Grade Reporting N–1
Grade Reporting N–2
Grade Reporting N–3
Course Master
GRADE REPORTING EXTRACT
S – 69
ANNUALLY
Extract Grade Reports for group indicated.
Format Grade Reporting Summary.
File
Grade Reporting Summary
File
File
Enrollment
Test Scoring
TRANSCRIPTS
S – 70
ANNUALLY OR AS REQUESTED
Format Transcripts.
Report Data
SORT
S – 71
Optional
Sorted Report Data
REPORT WRITER
S – 72
Print
Transcripts

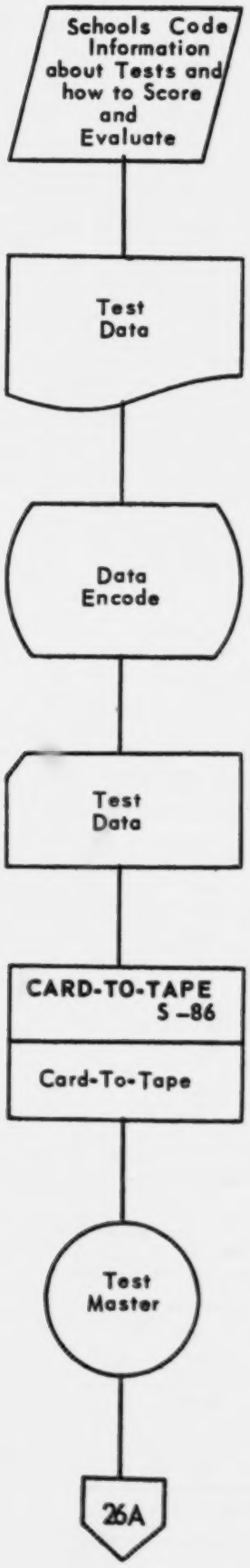

File
File
Enrollment
File
Test Scoring (From Previous Year)
File
GENERATE TEST SCORING
S – 73
ANNUALLY
Copy Records for Students Enrolled who are on Test Scoring File.
Test Scoring
File

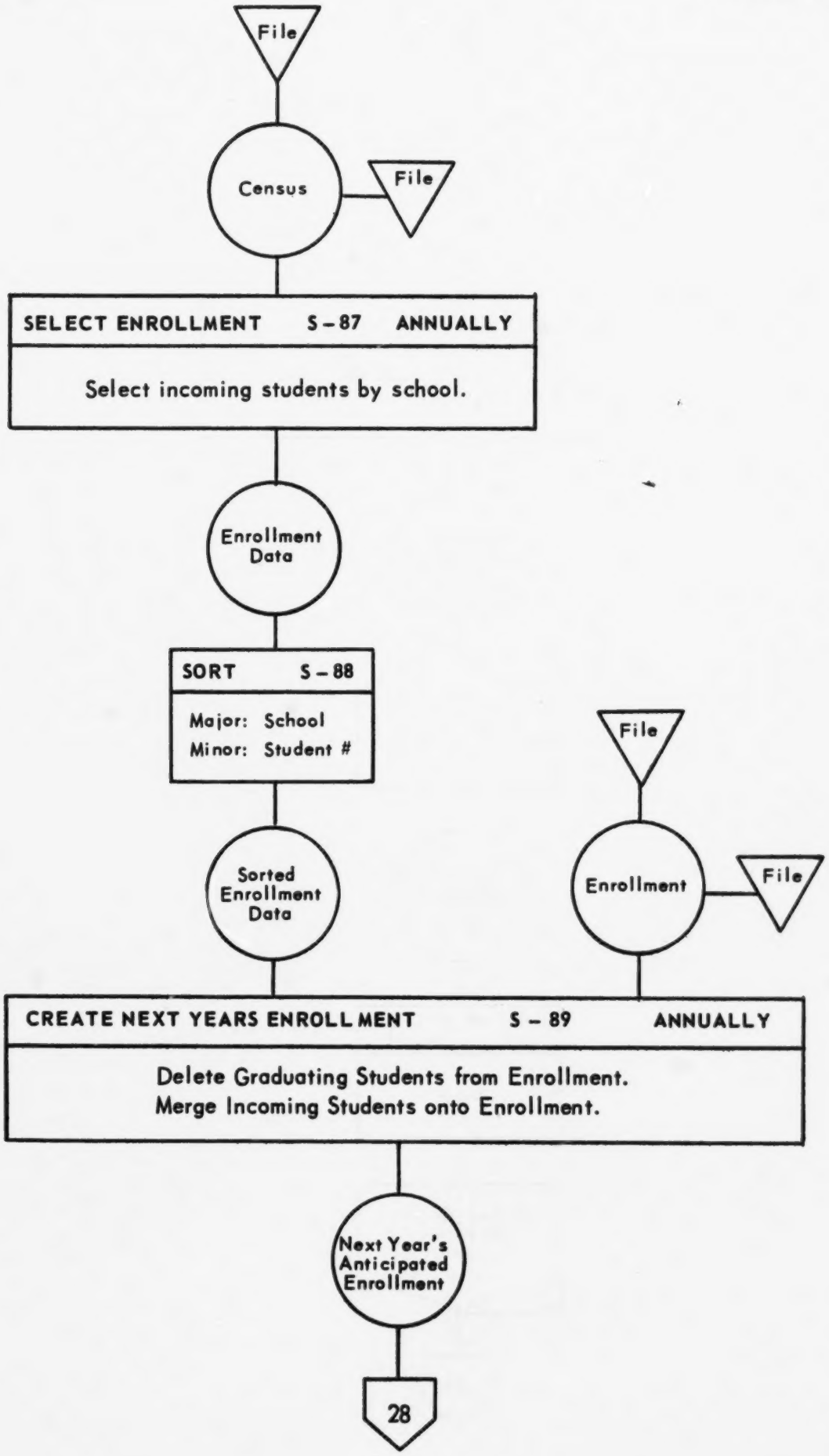

Schools Code Students Who Are To Take Test
Selected Students
Keypunch
Selected Students
File
Enrollment
File
GENERATE ANSWER SHEETS S – 74 AS REQUESTED
Format Answer Sheets.
Test Answer Sheet Data
SORT S – 75
Optional
Sorted Test Answer Sheet Data
REPORT WRITER S – 76
Print
Test Answer Sheets
I-F-4
25

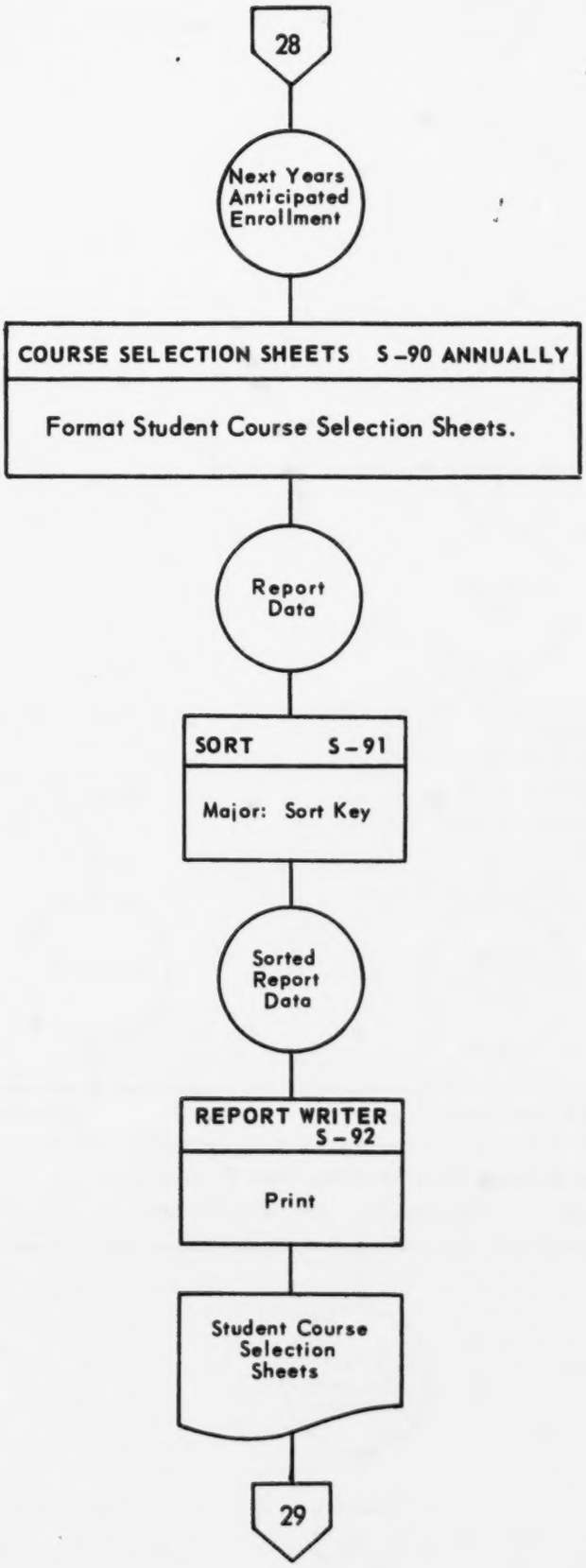

25
Test Answer Sheets
Test Answers Recorded by Those Taking Test
Test Scoring Optical Scan
Test Answers
EDIT TEST SCORING S – 77 AS REQUESTED
Edit and print errors.
Deblock and interpret.
Test Answers
Errors
SORT S – 78
Major: Student #
Inter: Test Number
Minor: Test Date
Sorted Test Answers
26

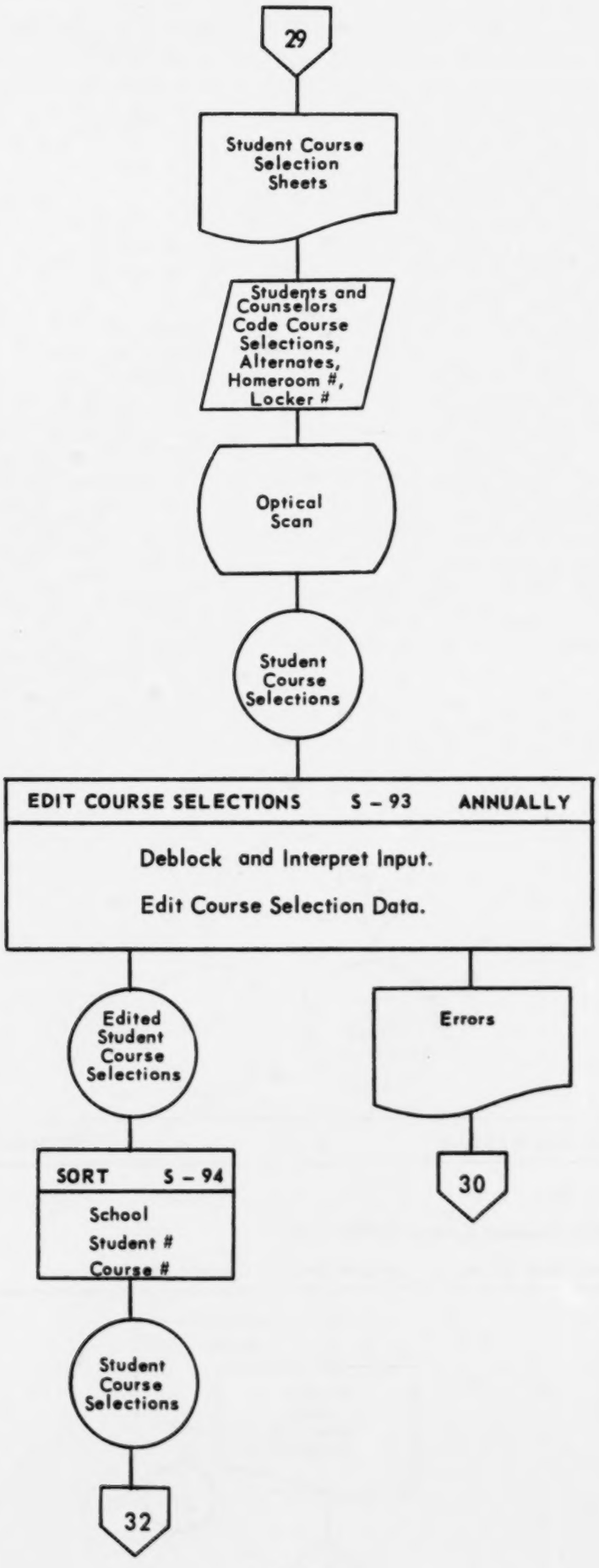

26
26A
Sorted Test Answers
Test Master
File
CONVERSION AND EVALUATION
S – 79
AS REQUESTED
Convert Test Scores based upon Information Parameters in Test Master.
Evaluate Test Results and Format Reports.
Report Data
Converted Test Scores
27
SORT
S – 80
Major: Sort Key
Sorted Report Data
REPORT WRITER
S – 81
Print
Correlation Coefficient Matrix
Test Statistics
Summary Comparison with Norms
Frequency Distribution
Item Analysis

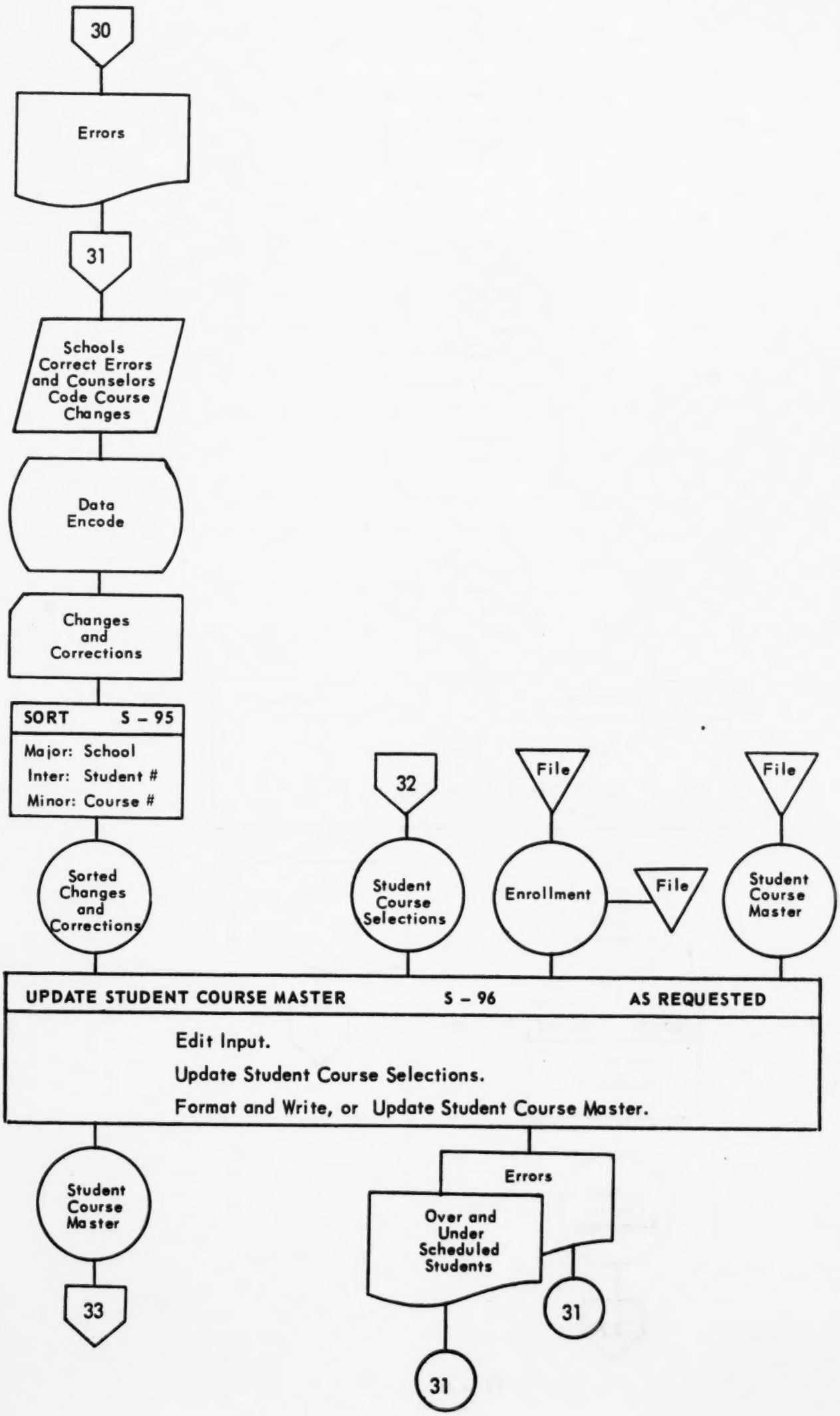

27
File
Converted Test Scores
Test Scoring
UPDATE TEST SCORING S – 82 AS REQUESTED
Update Test Scoring.
File
Test Scoring
File
Enrollment
File
TEST REPORTS S – 83 AS REQUESTED
Format Test Results Reports.
Report Data
SORT S – 84
Major: Sort Key
Sorted Test Data
REPORT WRITER S – 85
Print
Cumulative Test Scores Report
Individual Test Profile
Report of Test Results

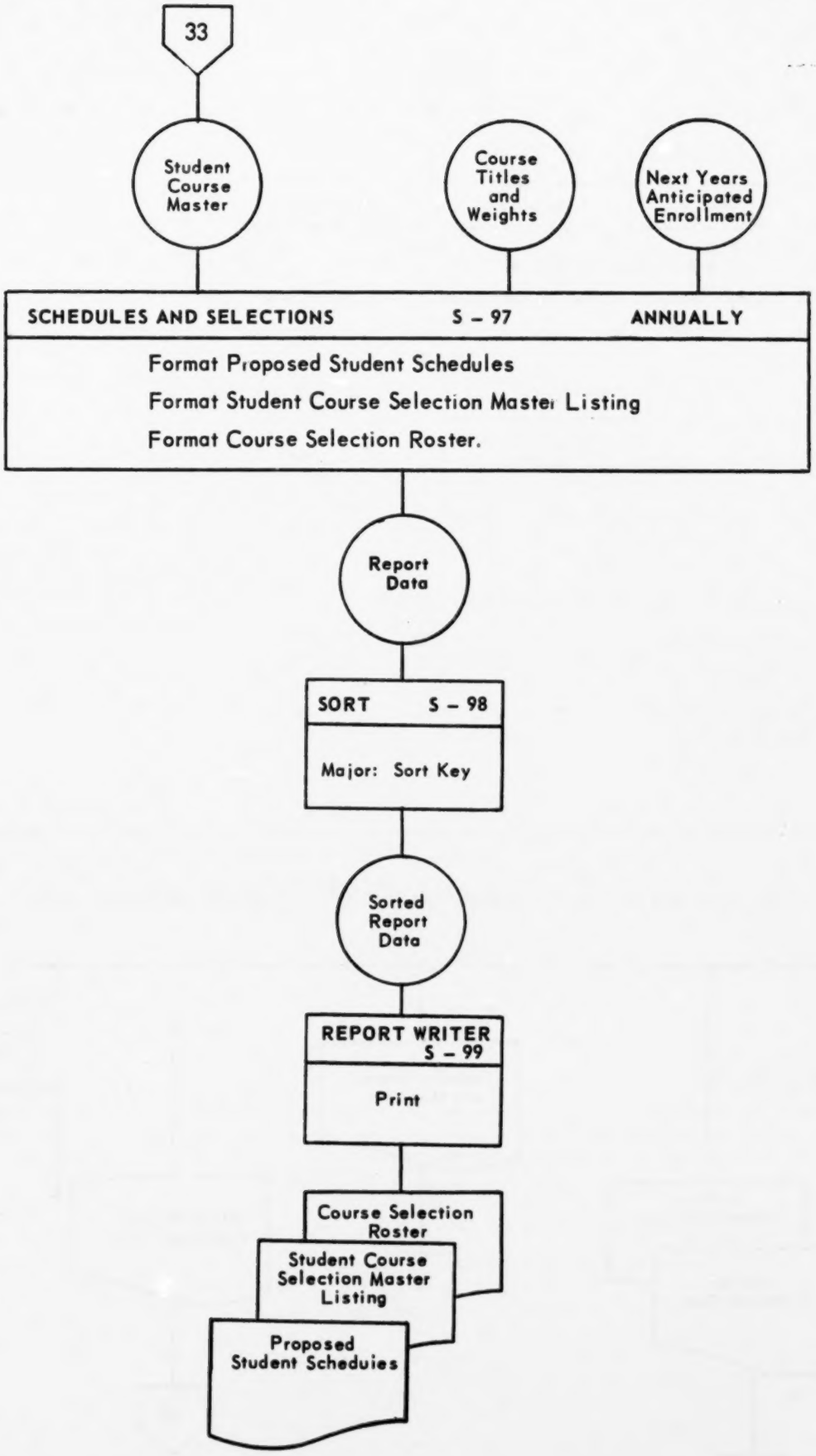

Schools Code Information about Tests and how to Score and Evaluate
Test Data
Data Encode
Test Data
CARD-TO-TAPE S-86
Card-To-Tape
Test Master
26A

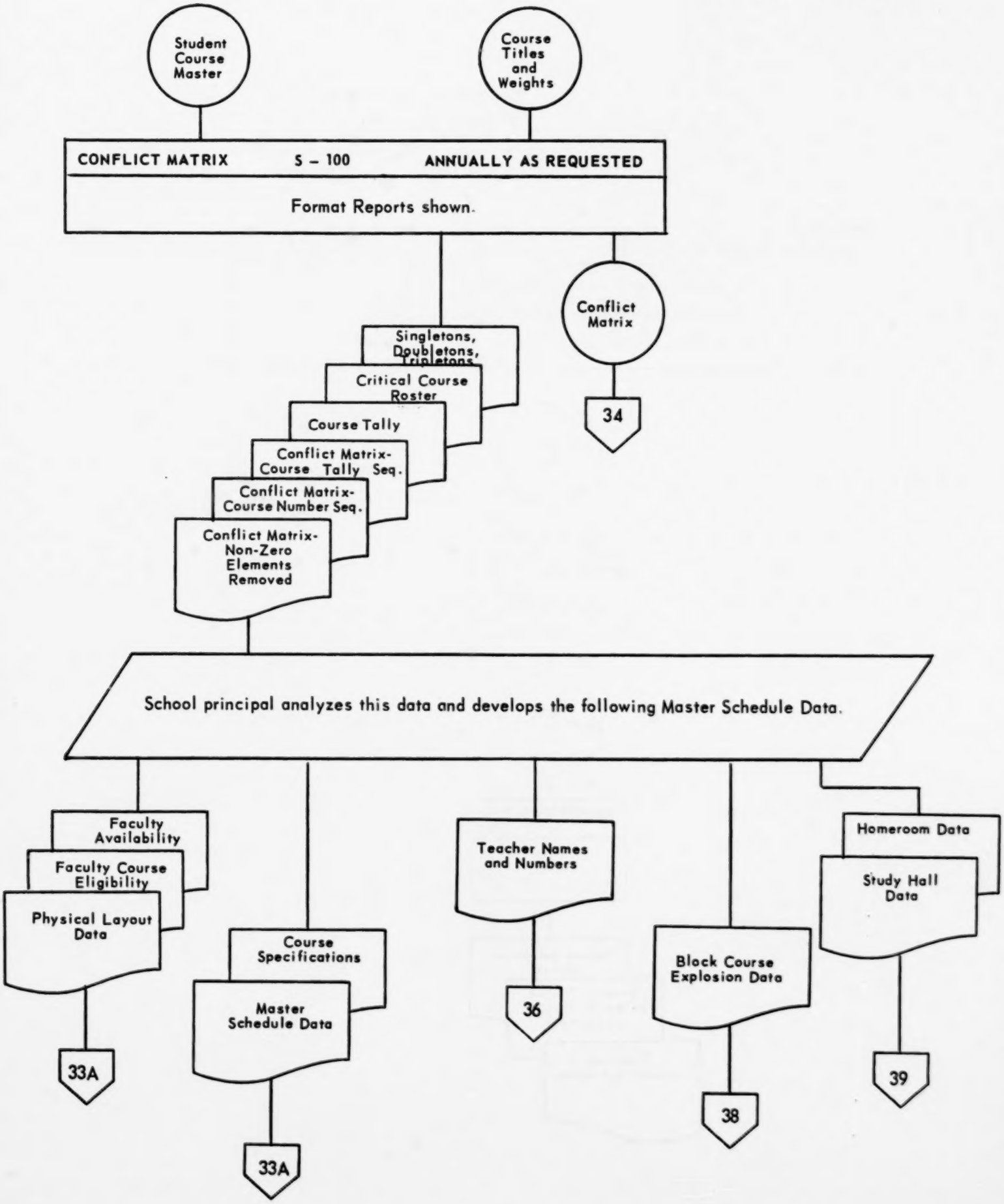

File
Census
File
SELECT ENROLLMENT S-87 ANNUALLY
Select incoming students by school.
Enrollment Data
SORT S-88
Major: School
Minor: Student #
File
Sorted Enrollment Data
Enrollment
File
CREATE NEXT YEARS ENROLLMENT S-89 ANNUALLY
Delete Graduating Students from Enrollment.
Merge Incoming Students onto Enrollment.
Next Year's Anticipated Enrollment
28

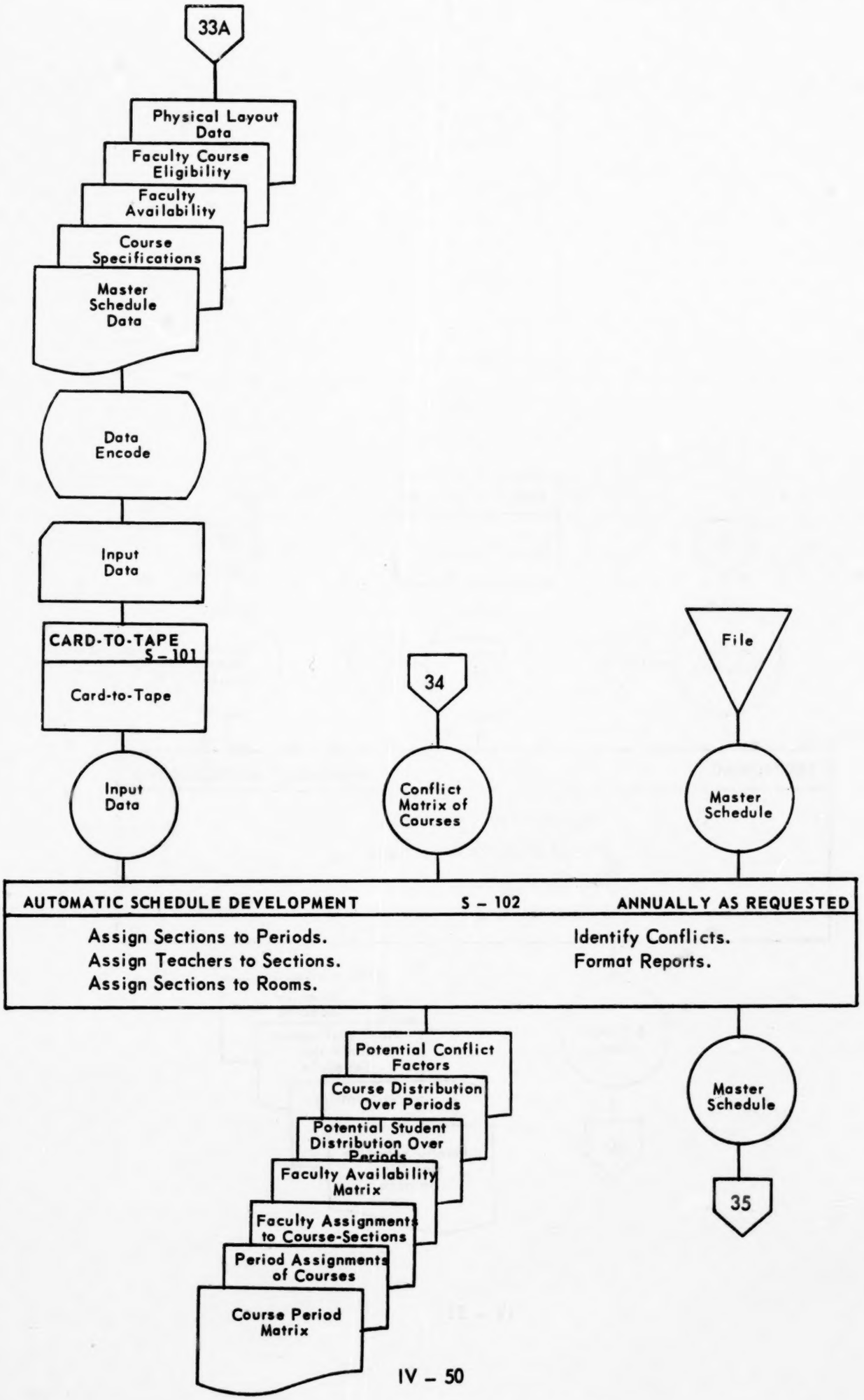

28
Next Years Anticipated Enrollment
COURSE SELECTION SHEETS S-90 ANNUALLY
Format Student Course Selection Sheets.
Report Data
SORT S-91
Major: Sort Key
Sorted Report Data
REPORT WRITER S-92
Print
Student Course Selection Sheets
29

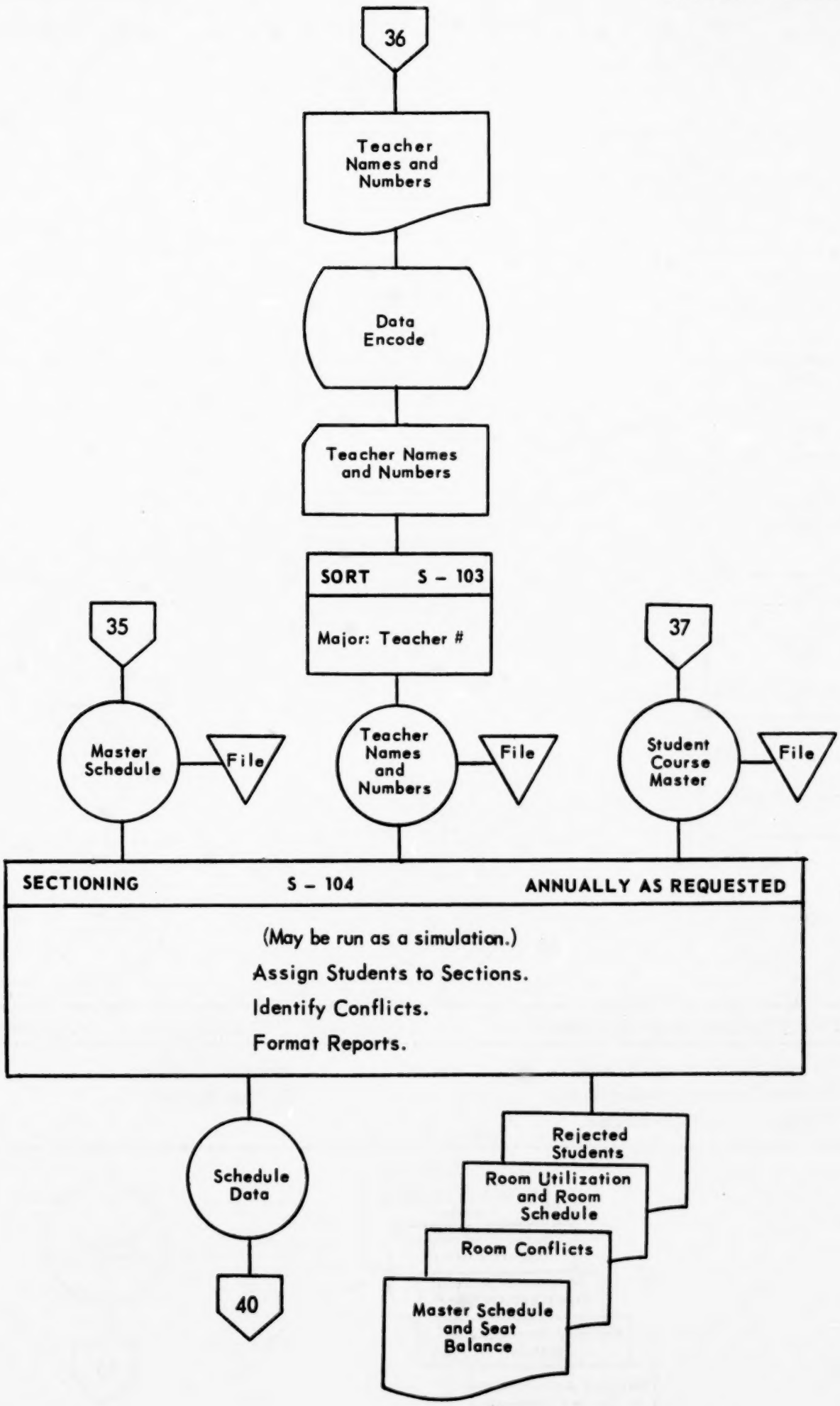

29
Student Course Selection Sheets
Students and Counselors Code Course Selections, Alternates, Homeroom #, Locker #
Optical Scan
Student Course Selections
EDIT COURSE SELECTIONS S – 93 ANNUALLY
Deblock and Interpret Input.
Edit Course Selection Data.
Edited Student Course Selections
Errors
SORT S – 94
School
Student #
Course #
30
Student Course Selections
32


30
Errors
31
Schools Correct Errors and Counselors Code Course Changes
Data Encode
Changes and Corrections
SORT S – 95
Major: School
Inter: Student #
Minor: Course #
Sorted Changes and Corrections
32
Student Course Selections
File
Enrollment
File
File
Student Course Master
UPDATE STUDENT COURSE MASTER S – 96 AS REQUESTED
Edit Input.
Update Student Course Selections.
Format and Write, or Update Student Course Master.
Student Course Master
33
Errors
Over and Under Scheduled Students
31
31

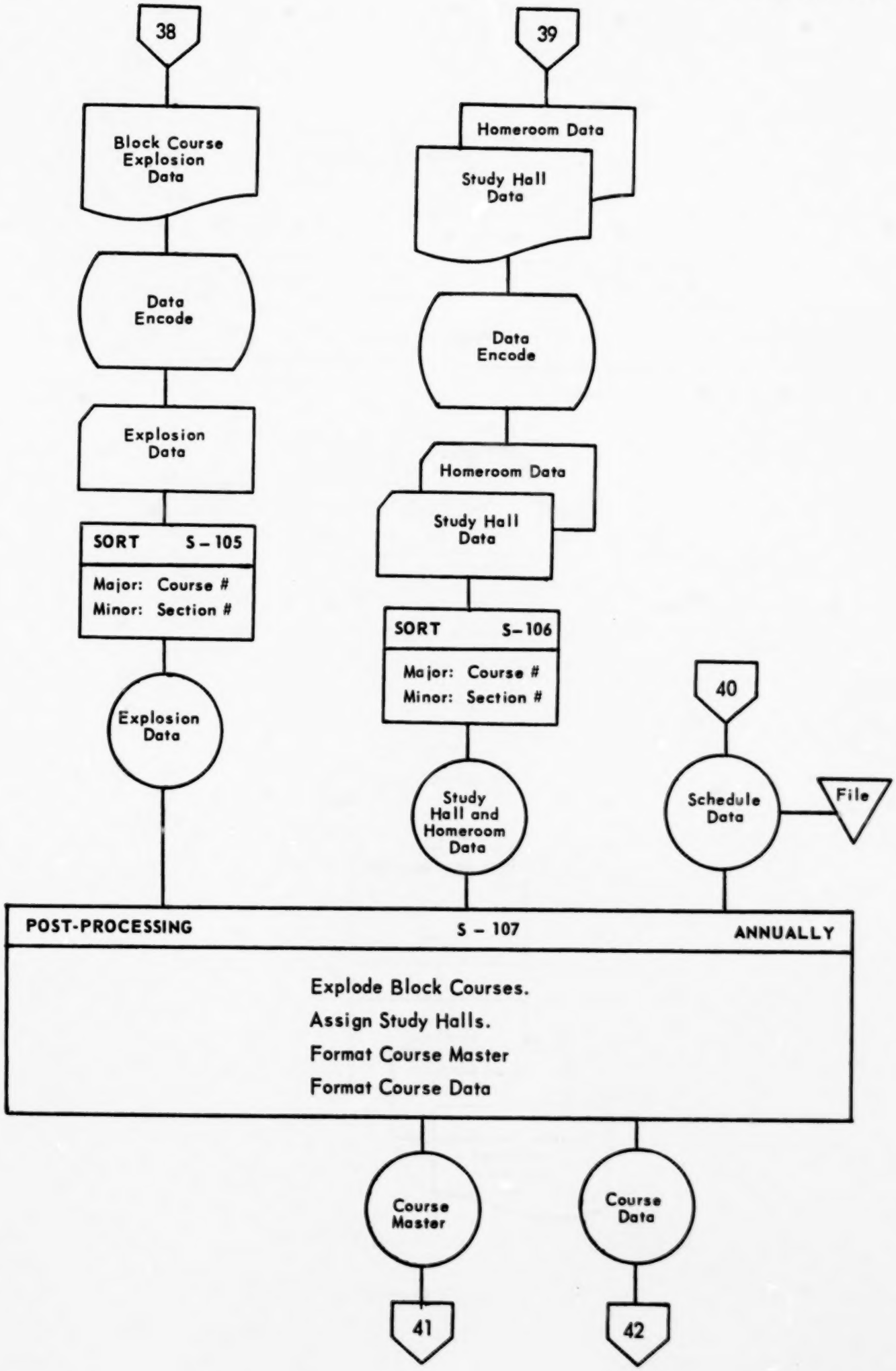

33
Student Course Master
Course Titles and Weights
Next Years Anticipated Enrollment
SCHEDULES AND SELECTIONS
S – 97
ANNUALLY
Format Proposed Student Schedules
Format Student Course Selection Master Listing
Format Course Selection Roster.
Report Data
SORT
S – 98
Major: Sort Key
Sorted Report Data
REPORT WRITER
S – 99
Print
Course Selection Roster
Student Course Selection Master Listing
Proposed Student Schedules

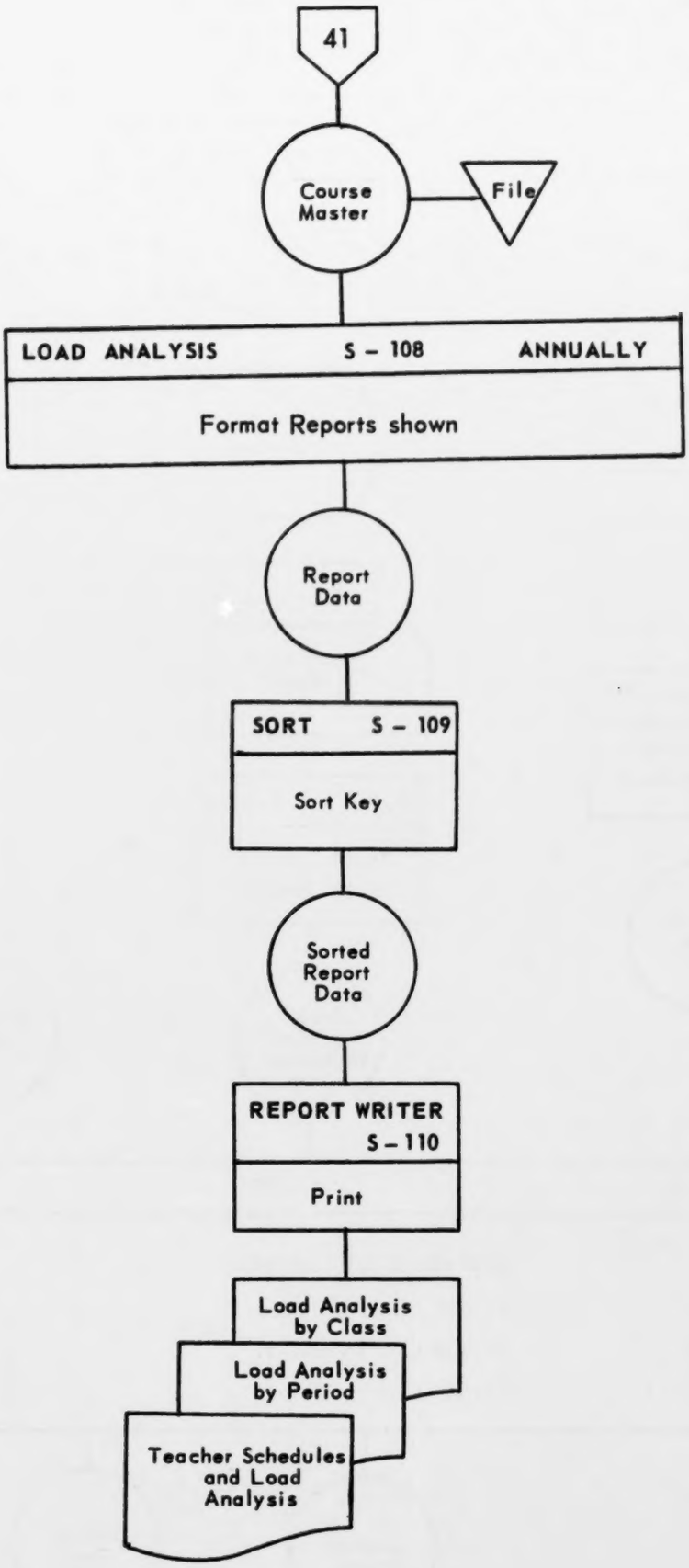

Student Course Master
Course Titles and Weights
CONFLICT MATRIX
S – 100
ANNUALLY AS REQUESTED
Format Reports shown.
Conflict Matrix
34
Singletons, Doubletons, Tripletons
Critical Course Roster
Course Tally
Conflict Matrix-Course Tally Seq.
Conflict Matrix-Course Number Seq.
Conflict Matrix-Non-Zero Elements Removed
School principal analyzes this data and develops the following Master Schedule Data.
Faculty Availability
Faculty Course Eligibility
Physical Layout Data
33A
Course Specifications
Master Schedule Data
33A
Teacher Names and Numbers
36
Block Course Explosion Data
38
Homeroom Data
Study Hall Data
39

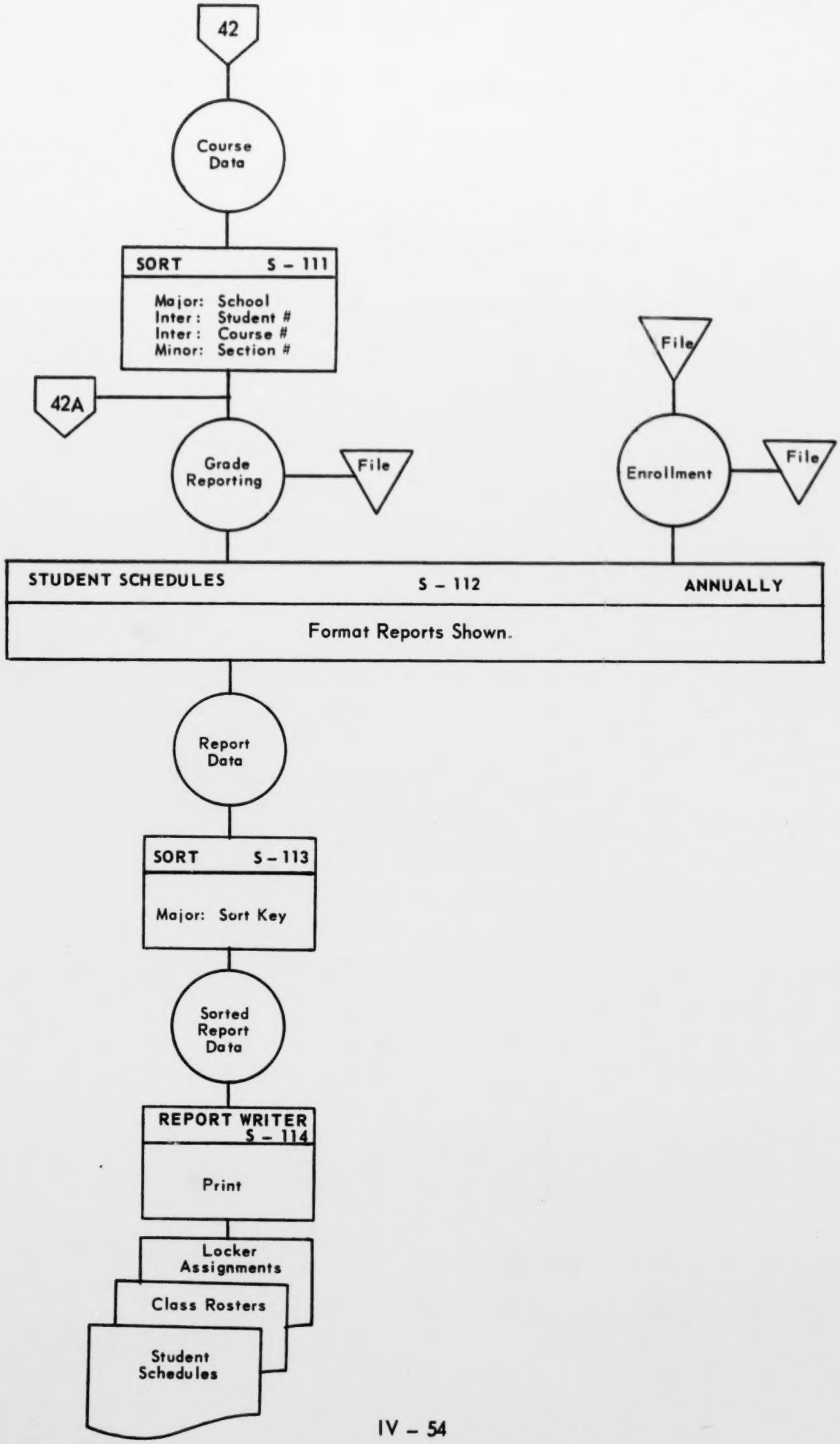

33A
Physical Layout Data
Faculty Course Eligibility
Faculty Availability
Course Specifications
Master Schedule Data
Data Encode
Input Data
CARD-TO-TAPE
S – 101
Card-to-Tape
Input Data
34
Conflict Matrix of Courses
File
Master Schedule
AUTOMATIC SCHEDULE DEVELOPMENT
S – 102
ANNUALLY AS REQUESTED
Assign Sections to Periods.
Assign Teachers to Sections.
Assign Sections to Rooms.
Identify Conflicts.
Format Reports.
Potential Conflict Factors
Course Distribution Over Periods
Potential Student Distribution Over Periods
Faculty Availability Matrix
Faculty Assignments to Course-Sections
Period Assignments of Courses
Course Period Matrix
Master Schedule
35


36
Teacher Names and Numbers
Data Encode
Teacher Names and Numbers
SORT S – 103
Major: Teacher #
35
Master Schedule
File
Teacher Names and Numbers
File
37
Student Course Master
File
SECTIONING S – 104 ANNUALLY AS REQUESTED
(May be run as a simulation.)
Assign Students to Sections.
Identify Conflicts.
Format Reports.
Schedule Data
40
Rejected Students
Room Utilization and Room Schedule
Room Conflicts
Master Schedule and Seat Balance

60


38
Block Course Explosion Data
Data Encode
Explosion Data
SORT S – 105
Major: Course #
Minor: Section #
Explosion Data
39
Homeroom Data
Study Hall Data
Data Encode
Homeroom Data
Study Hall Data
SORT S–106
Major: Course #
Minor: Section #
Study Hall and Homeroom Data
40
Schedule Data
File
POST-PROCESSING
S – 107
ANNUALLY
Explode Block Courses.
Assign Study Halls.
Format Course Master
Format Course Data
Course Master
Course Data
41
42

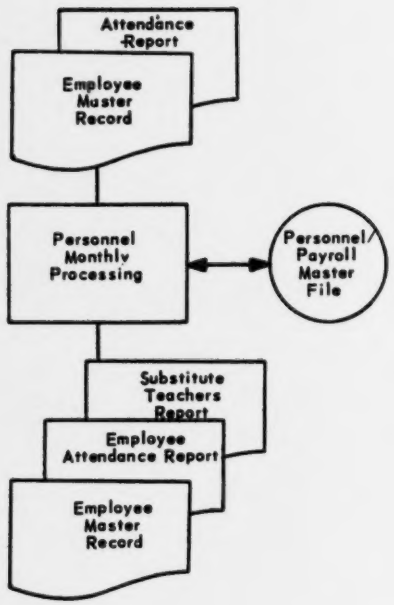

41
Course Master
File
LOAD ANALYSIS S – 108 ANNUALLY
Format Reports shown
Report Data
SORT S – 109
Sort Key
Sorted Report Data
REPORT WRITER S – 110
Print
Load Analysis by Class
Load Analysis by Period
Teacher Schedules and Load Analysis

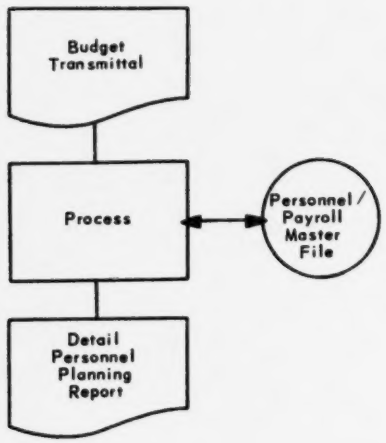

42
Course Data
SORT S – 111
Major: School
Inter: Student #
Inter: Course #
Minor: Section #
42A
Grade Reporting
File
File
Enrollment
File
STUDENT SCHEDULES S – 112 ANNUALLY
Format Reports Shown.
Report Data
SORT S – 113
Major: Sort Key
Sorted Report Data
REPORT WRITER S – 114
Print
Locker Assignments
Class Rosters
Student Schedules

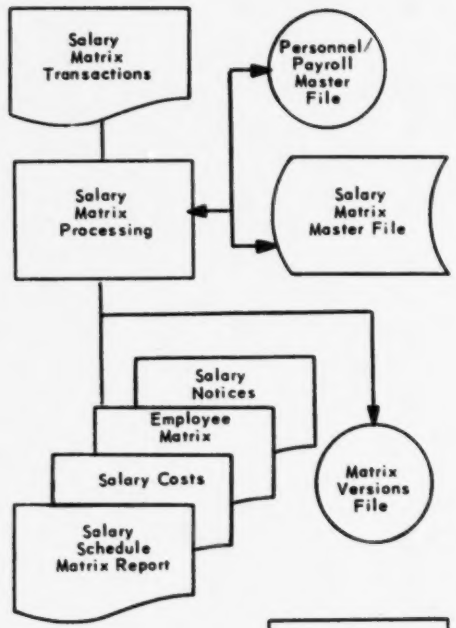
2. Personnel Subsystem

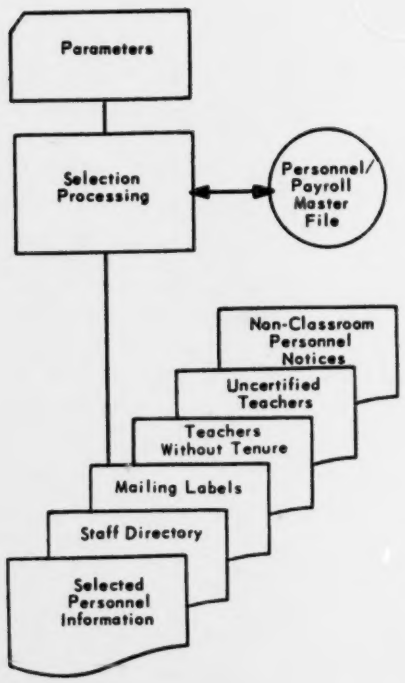
- General Flow Diagram
- Processing Flow Charts

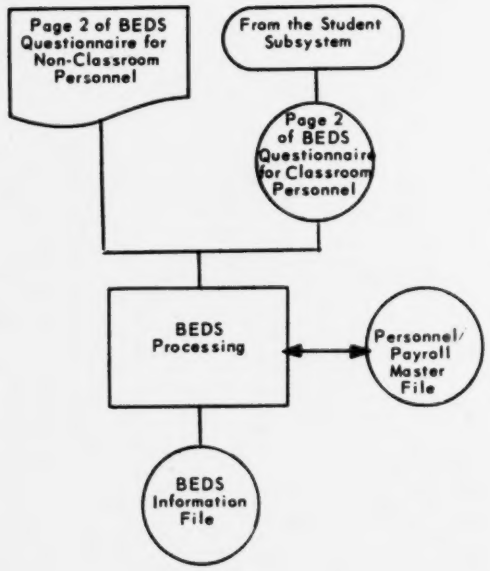
NYSEIS
PERSONNEL SUBSYSTEM
GENERAL FLOW DIAGRAM
PAGE 1 OF 1

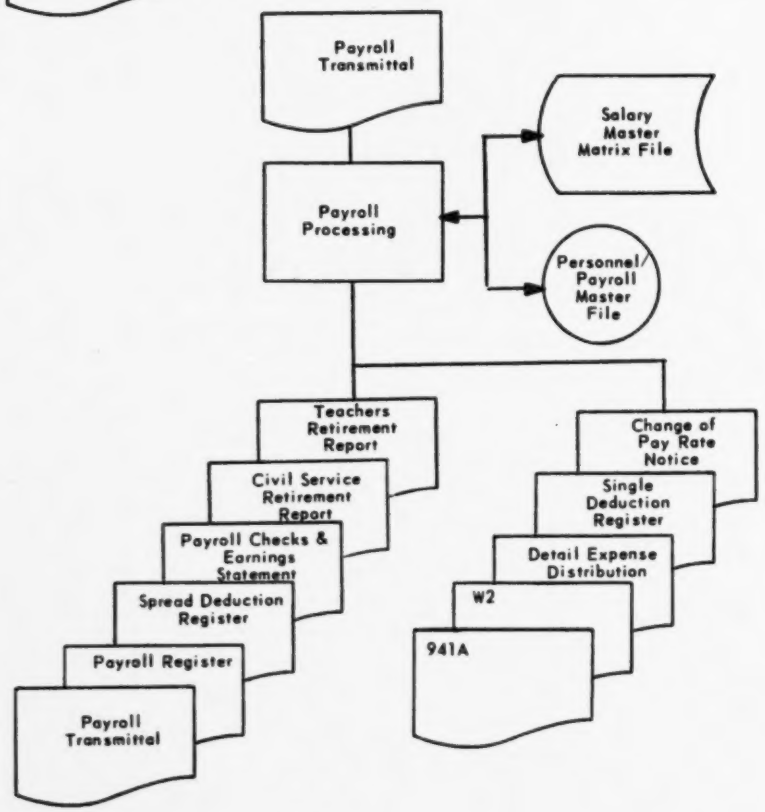


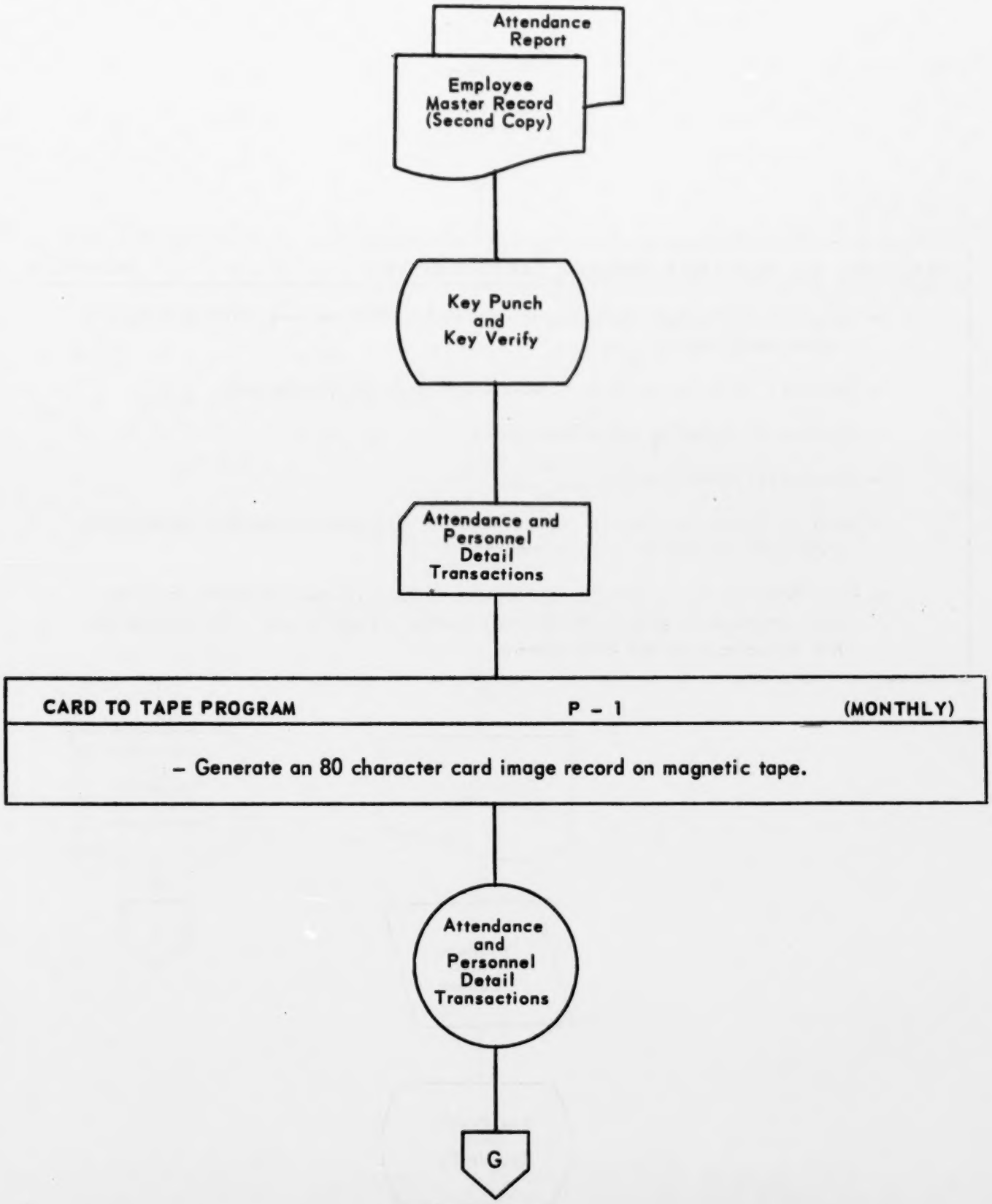




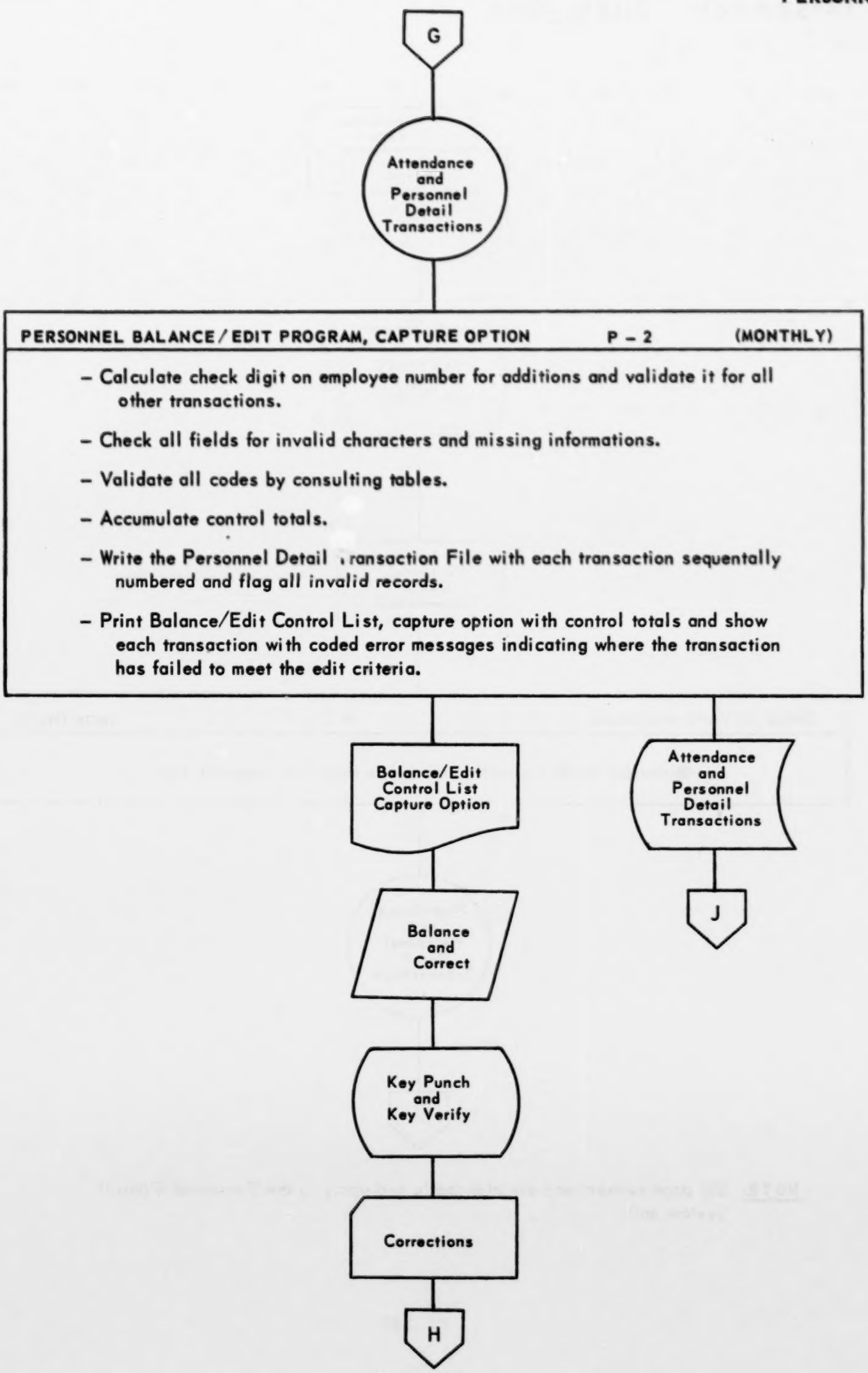


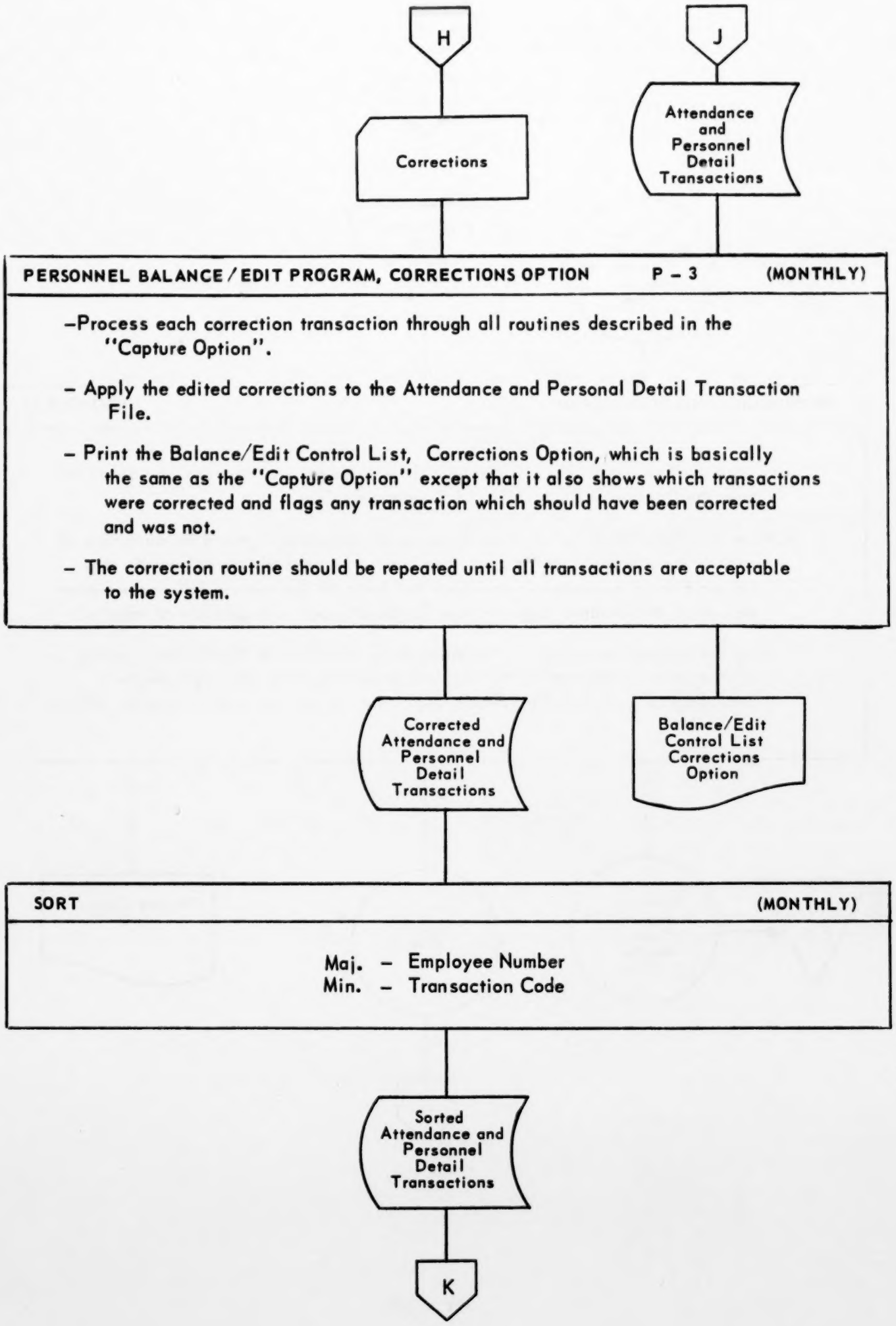

Page 2 of BEDS Questionnaire for Non-Classroom Personnel
From the Student Subsystem
Page 2 of BEDS Questionnaire for Classroom Personnel
BEDS Processing
Personnel/ Payroll Master File
BEDS Information File

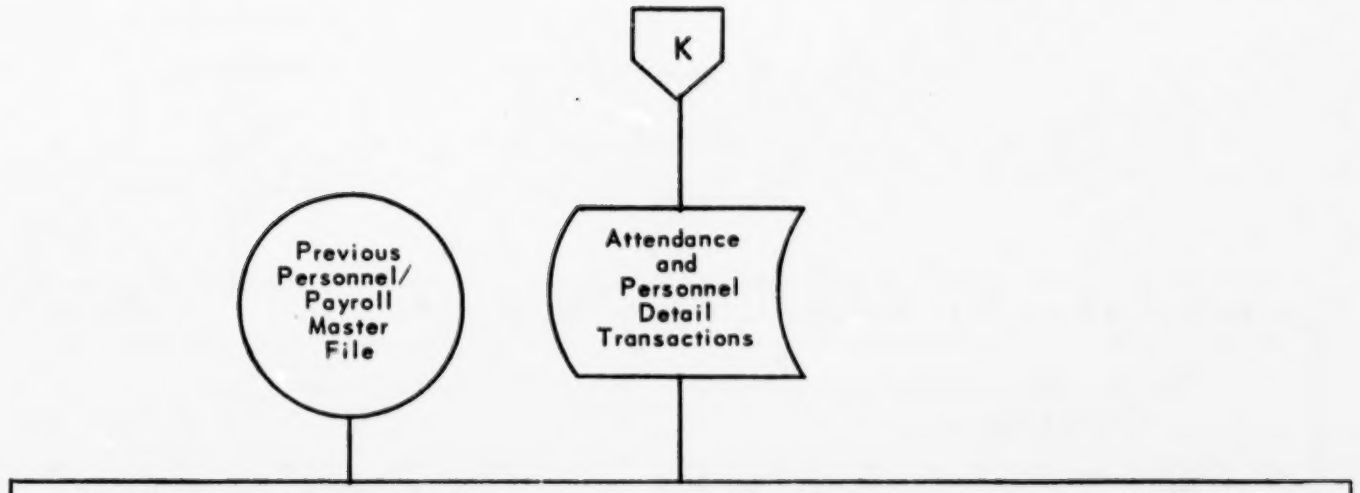


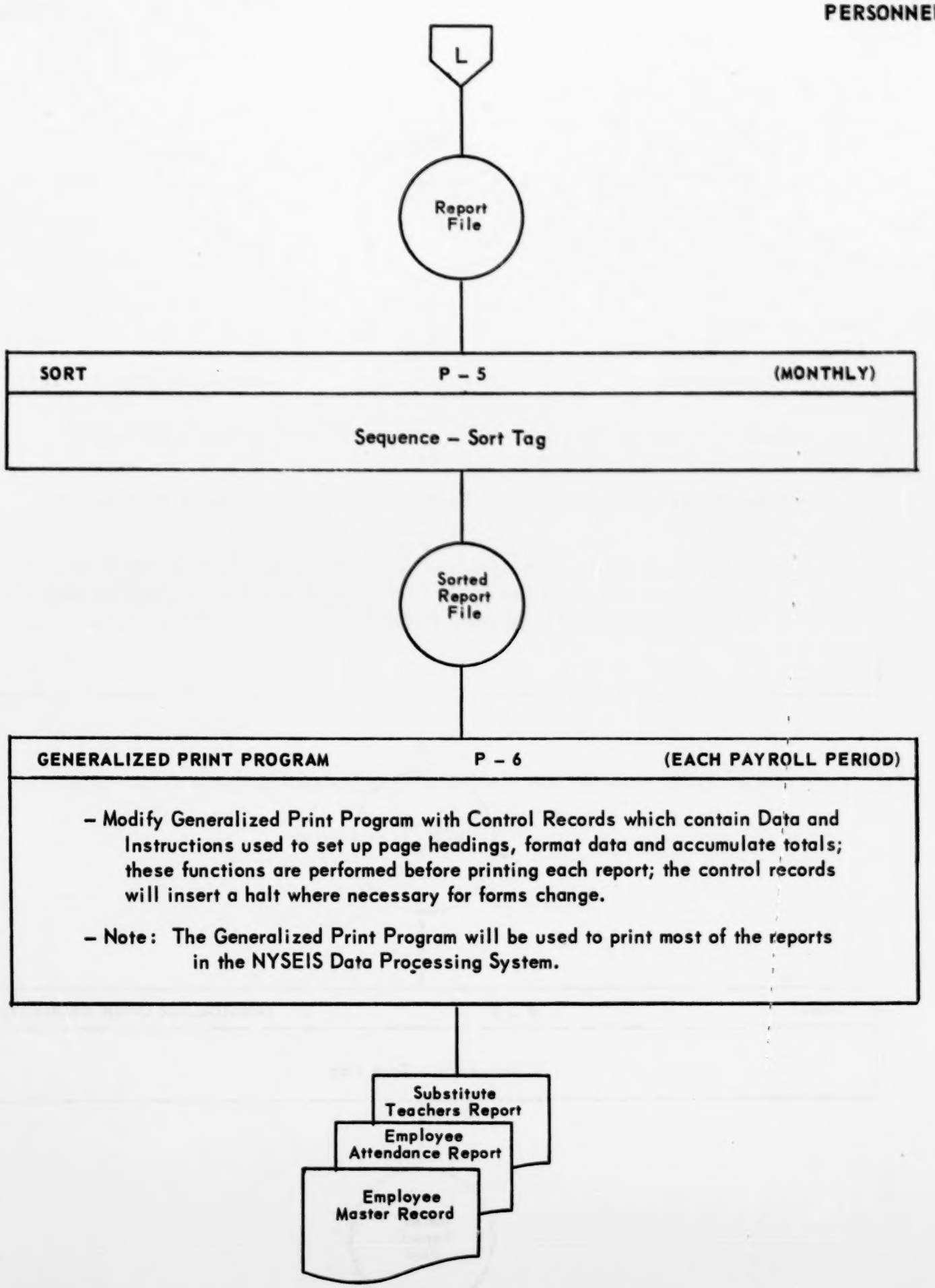

Attendance Report
Employee Master Record (Second Copy)
Key Punch and Key Verify
Attendance and Personnel Detail Transactions
CARD TO TAPE PROGRAM
P - 1
(MONTHLY)
- Generate an 80 character card image record on magnetic tape.
Attendance and Personnel Detail Transactions
G

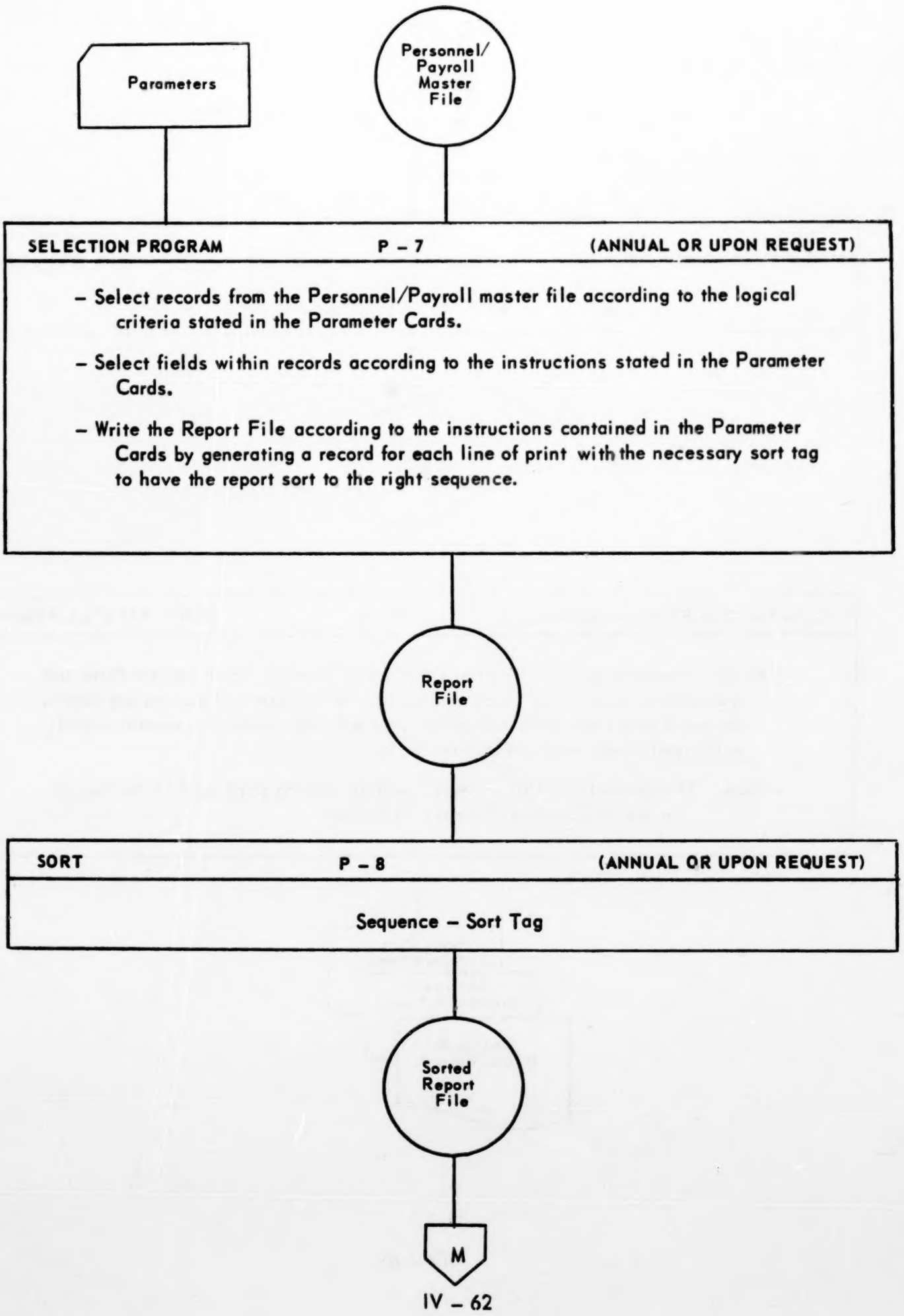
NOTE: Off page connections are alphabetic and apply to the Personnel/Payroll System only.

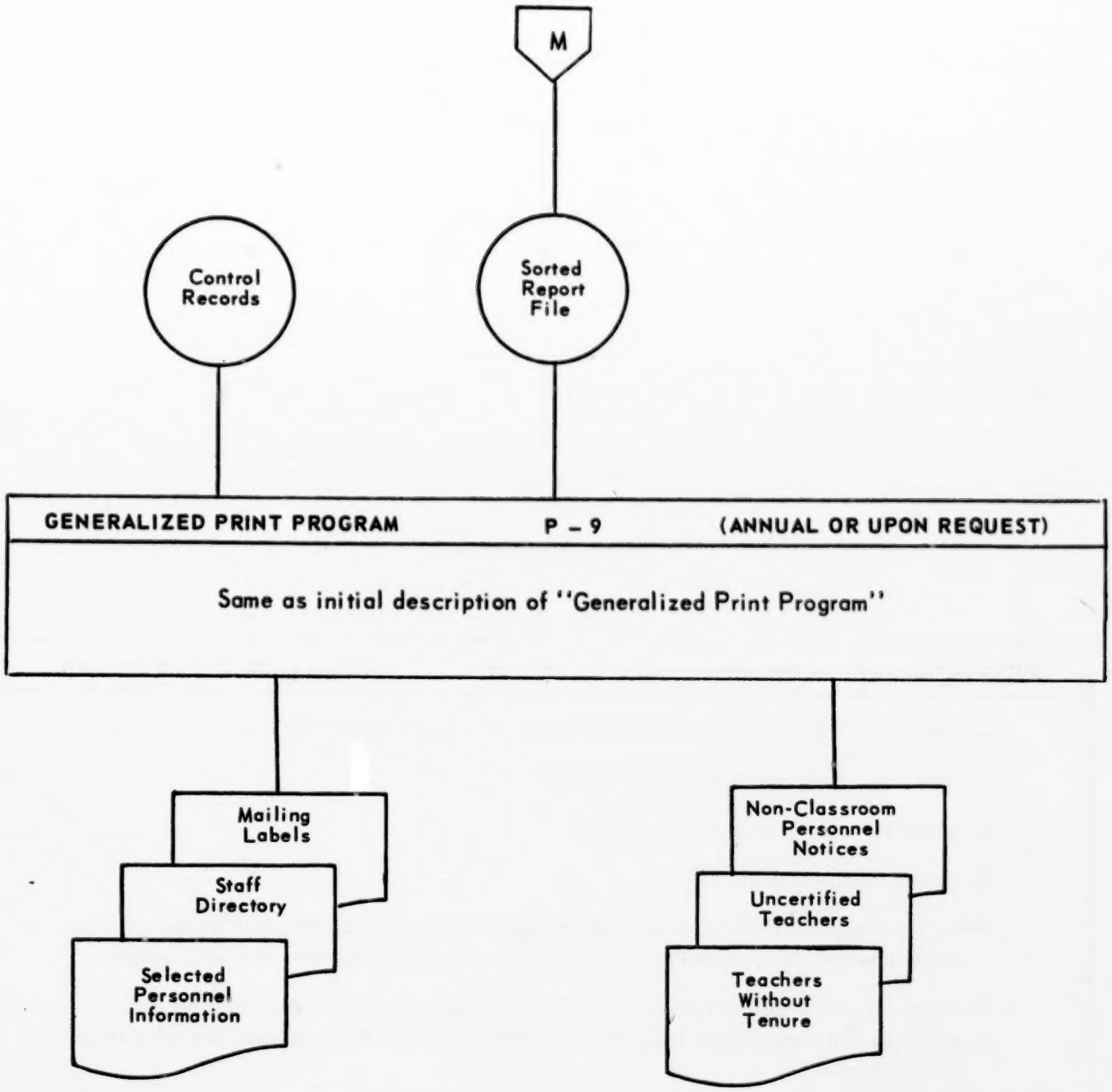

G
Attendance and Personnel Detail Transactions
PERSONNEL BALANCE/EDIT PROGRAM, CAPTURE OPTION P – 2 (MONTHLY)
– Calculate check digit on employee number for additions and validate it for all other transactions.
– Check all fields for invalid characters and missing informations.
– Validate all codes by consulting tables.
– Accumulate control totals.
– Write the Personnel Detail Transaction File with each transaction sequentally numbered and flag all invalid records.
– Print Balance/Edit Control List, capture option with control totals and show each transaction with coded error messages indicating where the transaction has failed to meet the edit criteria.
Balance/Edit Control List Capture Option
Balance and Correct
Key Punch and Key Verify
Corrections
H
Attendance and Personnel Detail Transactions
J

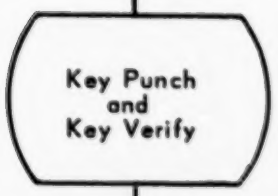

H
J
Corrections
Attendance and Personnel Detail Transactions
PERSONNEL BALANCE / EDIT PROGRAM, CORRECTIONS OPTION P – 3 (MONTHLY)
–Process each correction transaction through all routines described in the "Capture Option".
– Apply the edited corrections to the Attendance and Personal Detail Transaction File.
– Print the Balance/Edit Control List, Corrections Option, which is basically the same as the "Capture Option" except that it also shows which transactions were corrected and flags any transaction which should have been corrected and was not.
– The correction routine should be repeated until all transactions are acceptable to the system.
Corrected Attendance and Personnel Detail Transactions
Balance/Edit Control List Corrections Option
SORT (MONTHLY)
Maj. – Employee Number
Min. – Transaction Code
Sorted Attendance and Personnel Detail Transactions
K

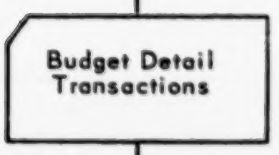

K
Previous Personnel/ Payroll Master File
Attendance and Personnel Detail Transactions
PERSONNEL UPDATE PROGRAM
P – 4
(MONTHLY)
– Update the Personnel/Payroll Master File with additions, changes and deletions. from the Personnel Payroll Detail Transaction File.
– Write the Report File; all reports are optional; generate a record for each line of print of each report; create a sort tag for each record which will enable the Report File to be sorted in one pass and have all the reports fall in the proper sequence; the program should allow for the addition and deletion of reports.
– Print the Update Control List; it should show all action to the file by printing all transactions applied to the file and generating error messages where necessary (e.g., unmatched detail, duplicate master, etc.); print control totals.
File
Updated Personnel/ Payroll Master File
Report File
Update Control List
L


L
Report File
SORT
P – 5
(MONTHLY)
Sequence – Sort Tag
Sorted Report File
GENERALIZED PRINT PROGRAM
P – 6
(EACH PAYROLL PERIOD)
– Modify Generalized Print Program with Control Records which contain Data and Instructions used to set up page headings, format data and accumulate totals; these functions are performed before printing each report; the control records will insert a halt where necessary for forms change.
– Note: The Generalized Print Program will be used to print most of the reports in the NYSEIS Data Processing System.
Substitute Teachers Report
Employee Attendance Report
Employee Master Record


Parameters
Personnel/ Payroll Master File
SELECTION PROGRAM
P – 7
(ANNUAL OR UPON REQUEST)
– Select records from the Personnel/Payroll master file according to the logical criteria stated in the Parameter Cards.
– Select fields within records according to the instructions stated in the Parameter Cards.
– Write the Report File according to the instructions contained in the Parameter Cards by generating a record for each line of print with the necessary sort tag to have the report sort to the right sequence.
Report File
SORT
P – 8
(ANNUAL OR UPON REQUEST)
Sequence – Sort Tag
Sorted Report File
M
IV – 62

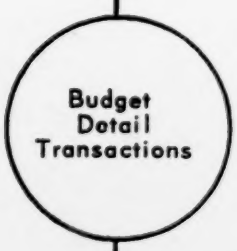

M
Control Records
Sorted Report File
GENERALIZED PRINT PROGRAM
P – 9
(ANNUAL OR UPON REQUEST)
Same as initial description of "Generalized Print Program"
Mailing Labels
Staff Directory
Selected Personnel Information
Non-Classroom Personnel Notices
Uncertified Teachers
Teachers Without Tenure

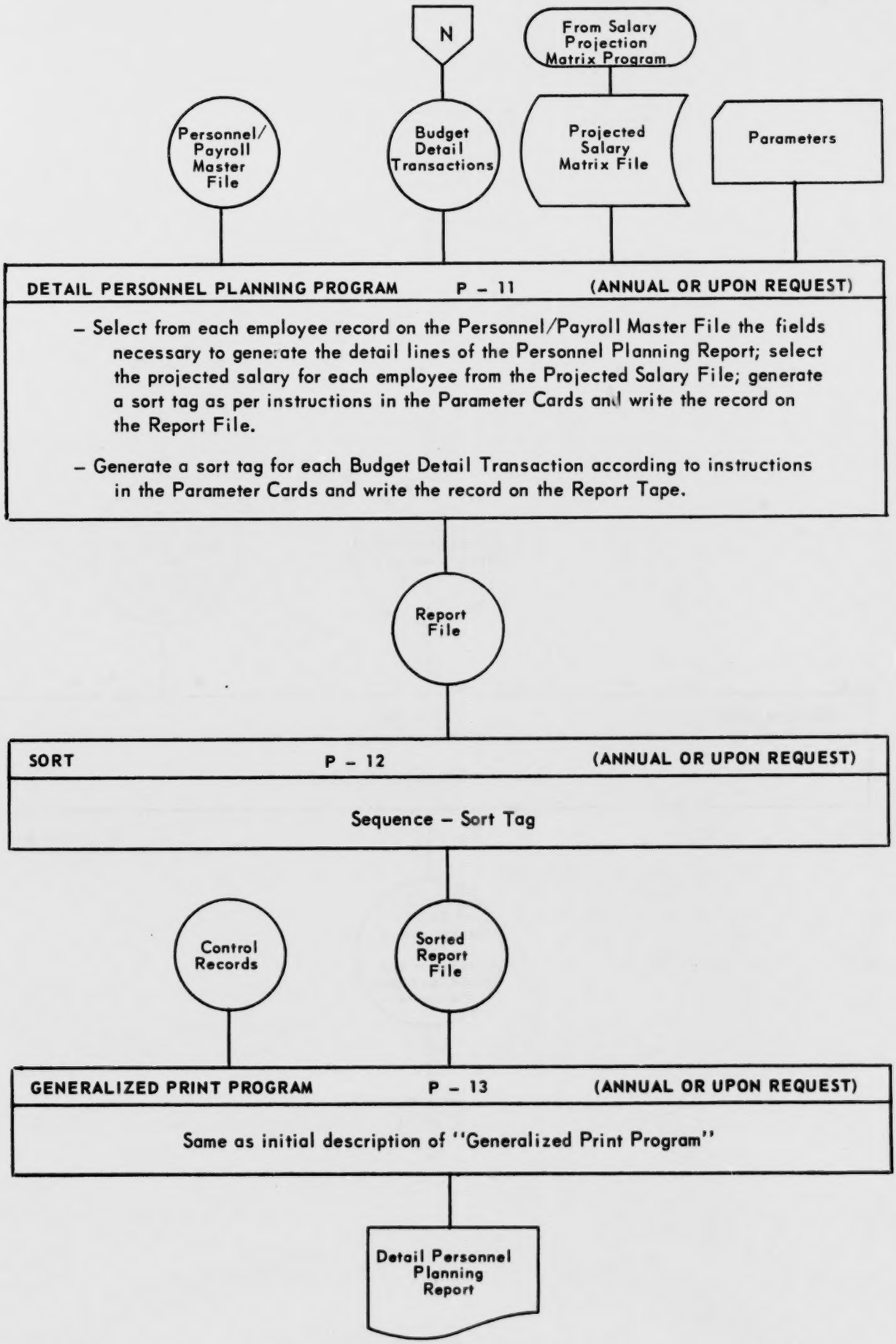




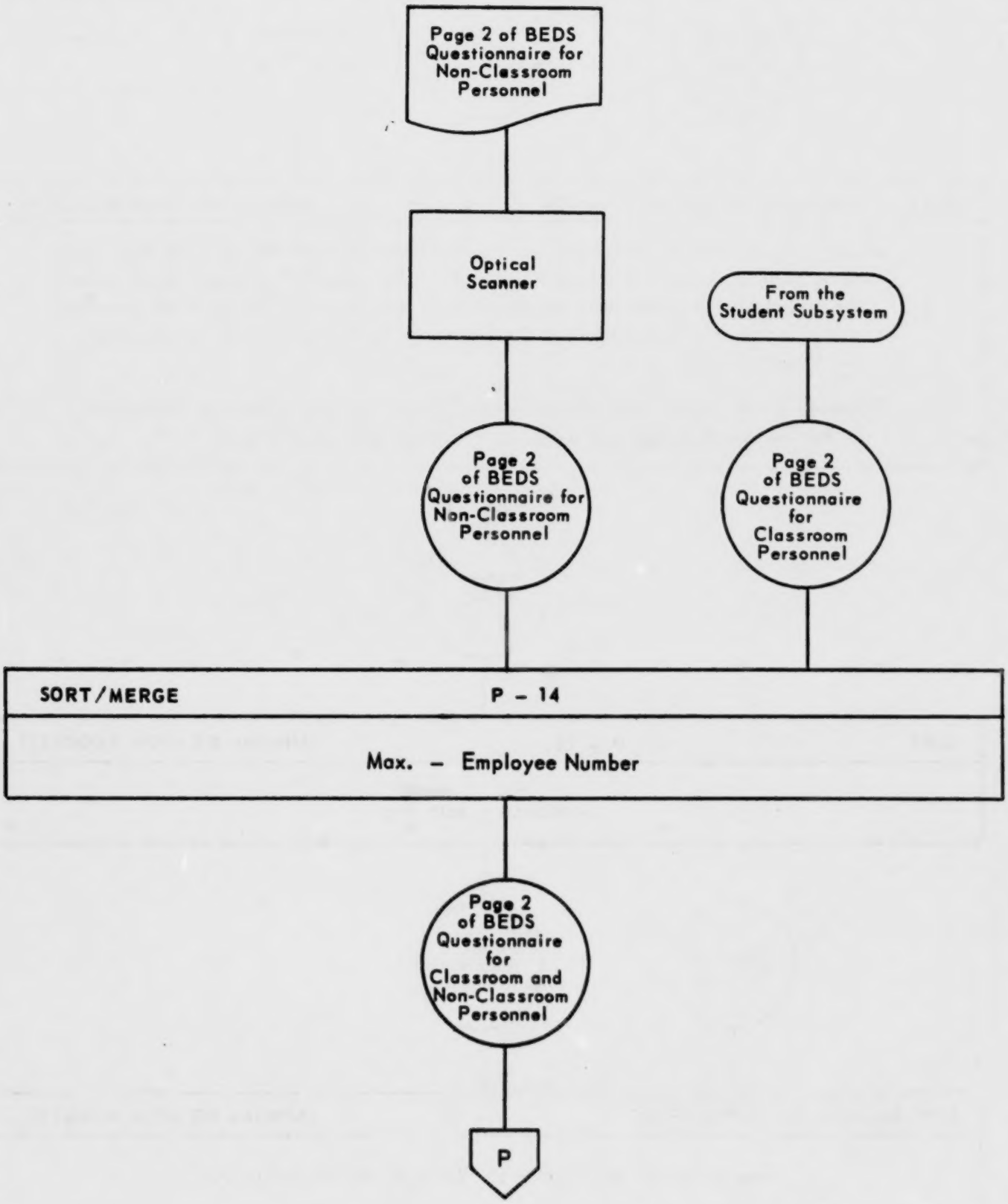
BUDGET BALANCE / EDIT PROGRAM **P – 10** **(ANNUAL OR UPON REQUEST)**

- Check all fields for invalid characters and missing information.
- Validate all codes by consulting tables.
- Accumulate control totals.
- Write the Budget Detail File.
- Print the Balance/Edit Control List and show each transaction with coded error messages indicating where the transaction has failed to meet the edit criteria.
- Corrections are made by manually correcting the punch cards and rerunning the program. This procedure should be repeated until all transactions are acceptable to the system.

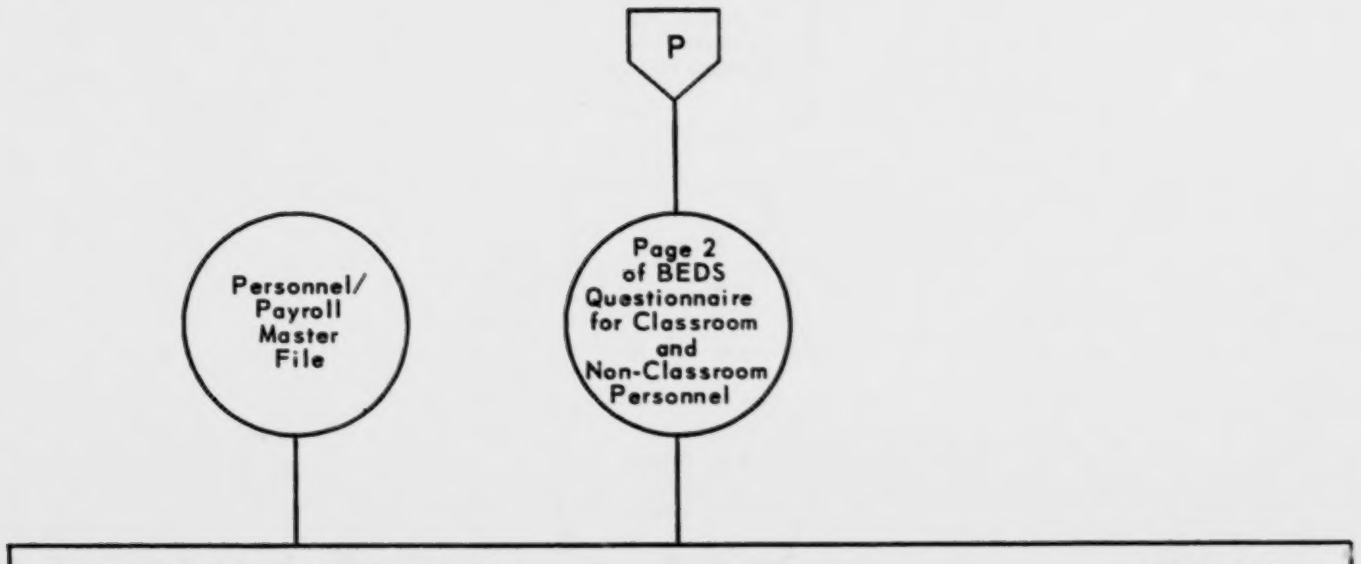



N
From Salary Projection Matrix Program
Personnel/ Payroll Master File
Budget Detail Transactions
Projected Salary Matrix File
Parameters
DETAIL PERSONNEL PLANNING PROGRAM P – 11 (ANNUAL OR UPON REQUEST)
– Select from each employee record on the Personnel/Payroll Master File the fields necessary to generate the detail lines of the Personnel Planning Report; select the projected salary for each employee from the Projected Salary File; generate a sort tag as per instructions in the Parameter Cards and write the record on the Report File.
– Generate a sort tag for each Budget Detail Transaction according to instructions in the Parameter Cards and write the record on the Report Tape.
Report File
SORT P – 12 (ANNUAL OR UPON REQUEST)
Sequence – Sort Tag
Control Records
Sorted Report File
GENERALIZED PRINT PROGRAM P – 13 (ANNUAL OR UPON REQUEST)
Same as initial description of "Generalized Print Program"
Detail Personnel Planning Report

74

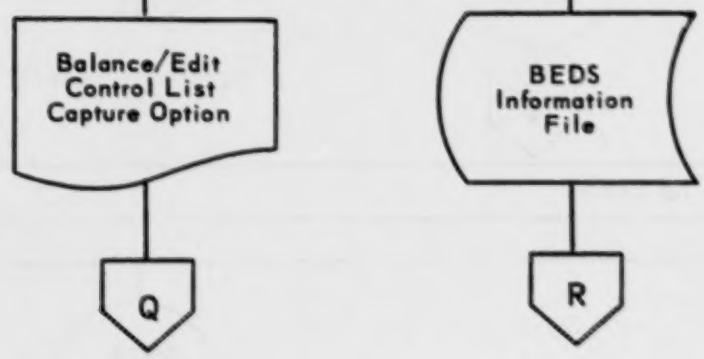

Page 2 of BEDS Questionnaire for Non-Classroom Personnel
Optical Scanner
From the Student Subsystem
Page 2 of BEDS Questionnaire for Non-Classroom Personnel
Page 2 of BEDS Questionnaire for Classroom Personnel
SORT/MERGE
P - 14
Max. - Employee Number
Page 2 of BEDS Questionnaire for Classroom and Non-Classroom Personnel
P

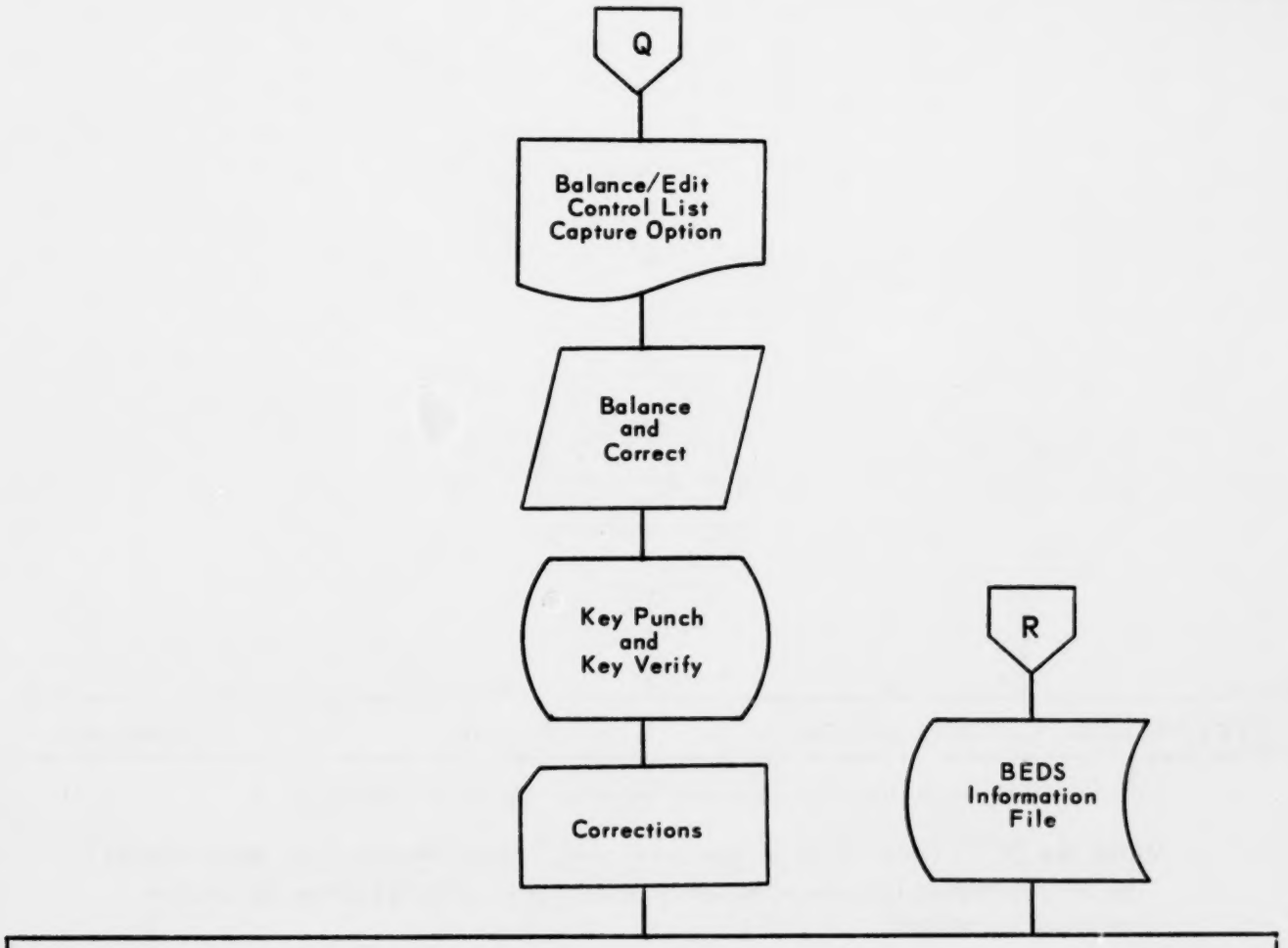
75



BEDS PROGRAM, CAPTURE OPTION **P – 15** **(ANNUAL)**

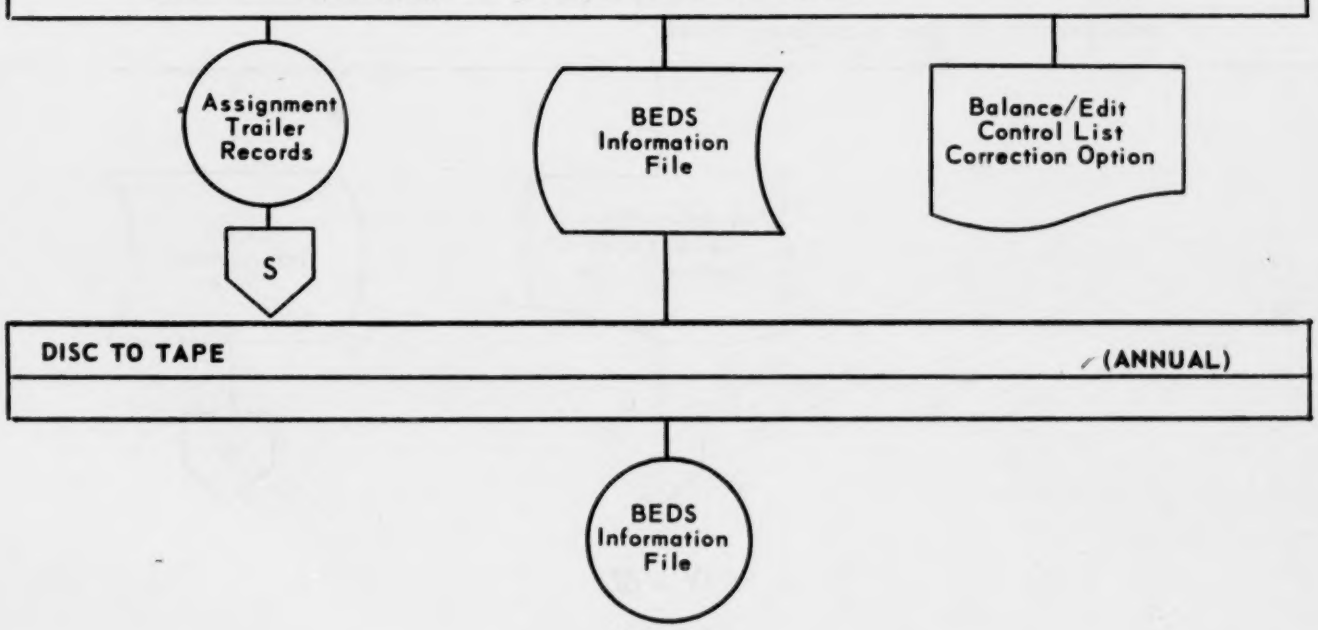
- Validate the check digit for each employee on the BEDS Detail File.
- Match the BEDS Detail File to the Personnel/Payroll Master File; there should be no unmatched Details or Masters; generate an error message for any unmatched condition.
- Validate all codes on the BEDS Detail File by consulting tables; check all fields for invalid characters and missing information.
- Accumulate record counts.
- Select BEDS Page 1 information for classroom and non-classroom personnel from the Personnel/Payroll Master File; if there is missing information create an error message.
- Write, for each employee, the Page 1 information from the Master File and the Page 2 information from the Detail File on the BEDS Information File.
- Print the Balance/Edit Control List, Capture Option with record counts and show each employee record with error messages indicating where the record has failed to meet the edit criteria; clearly indicate all unmatched conditions between the Master and Detail Files.



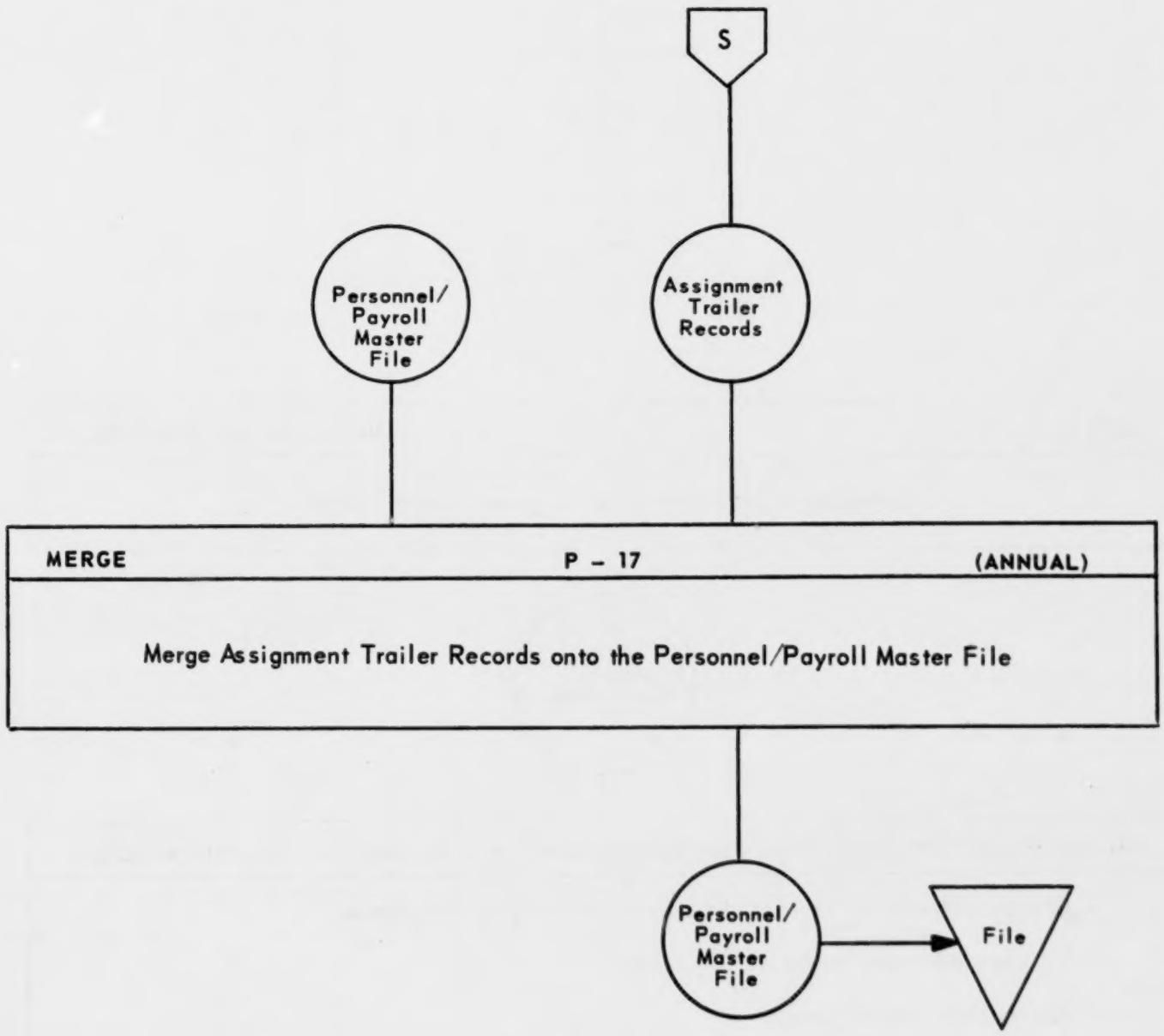


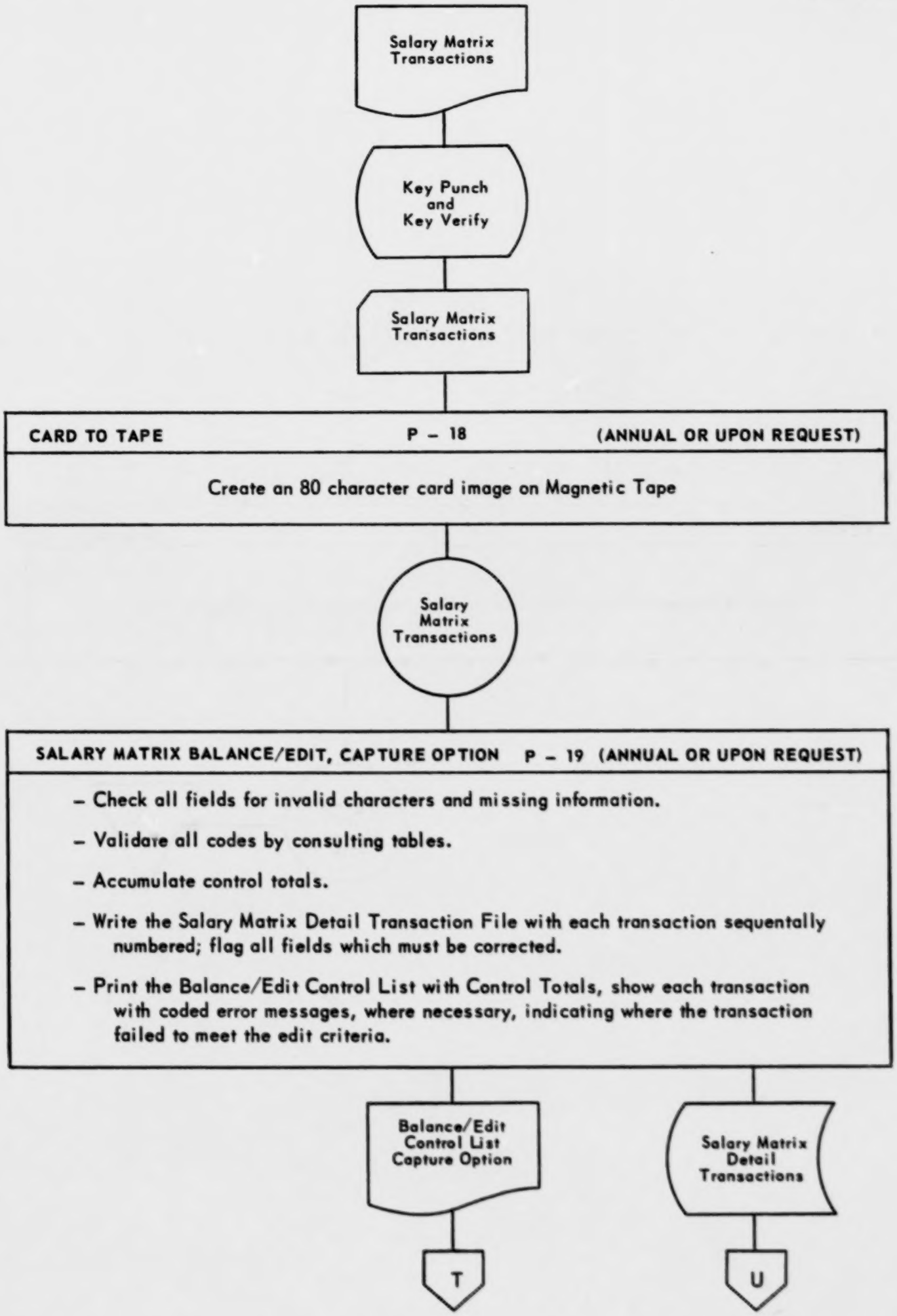
BEDS PROGRAM, CORRECTIONS OPTION P – 16 **(ANNUAL)**

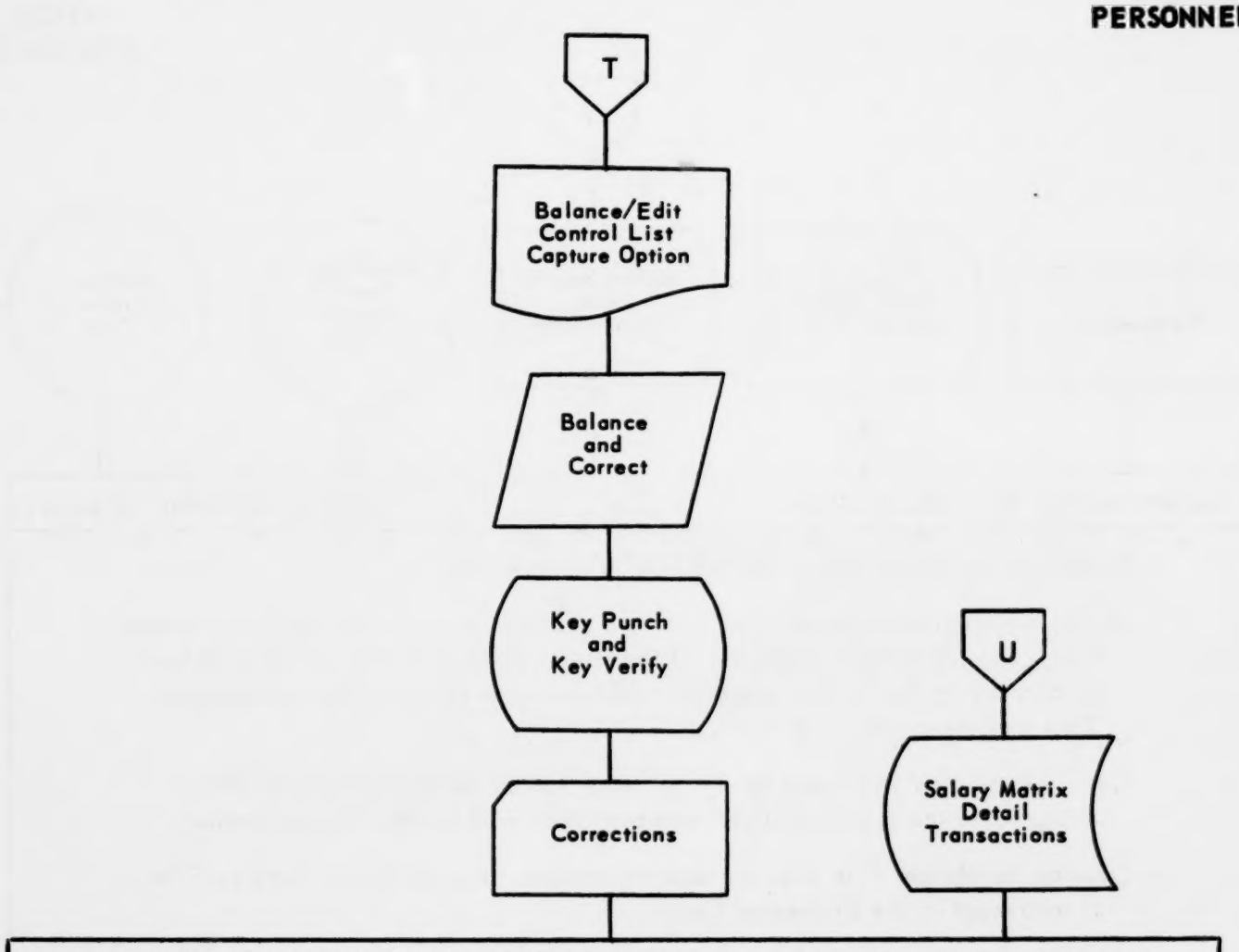
- Process each correction transaction through all routines described in the "Capture Option".
- Apply the edited corrections to the BEDS Information File.
- Print the Balance/Edit Control List, Corrections Option which is basically the same as the Capture Option except that it also shows which records were corrected and flags any condition which should have been corrected and was not.
- The correction routine should be repeated until the BEDS Information File has met all the edit criteria.
- Create for each employee an Assignment Trailer Record.



77

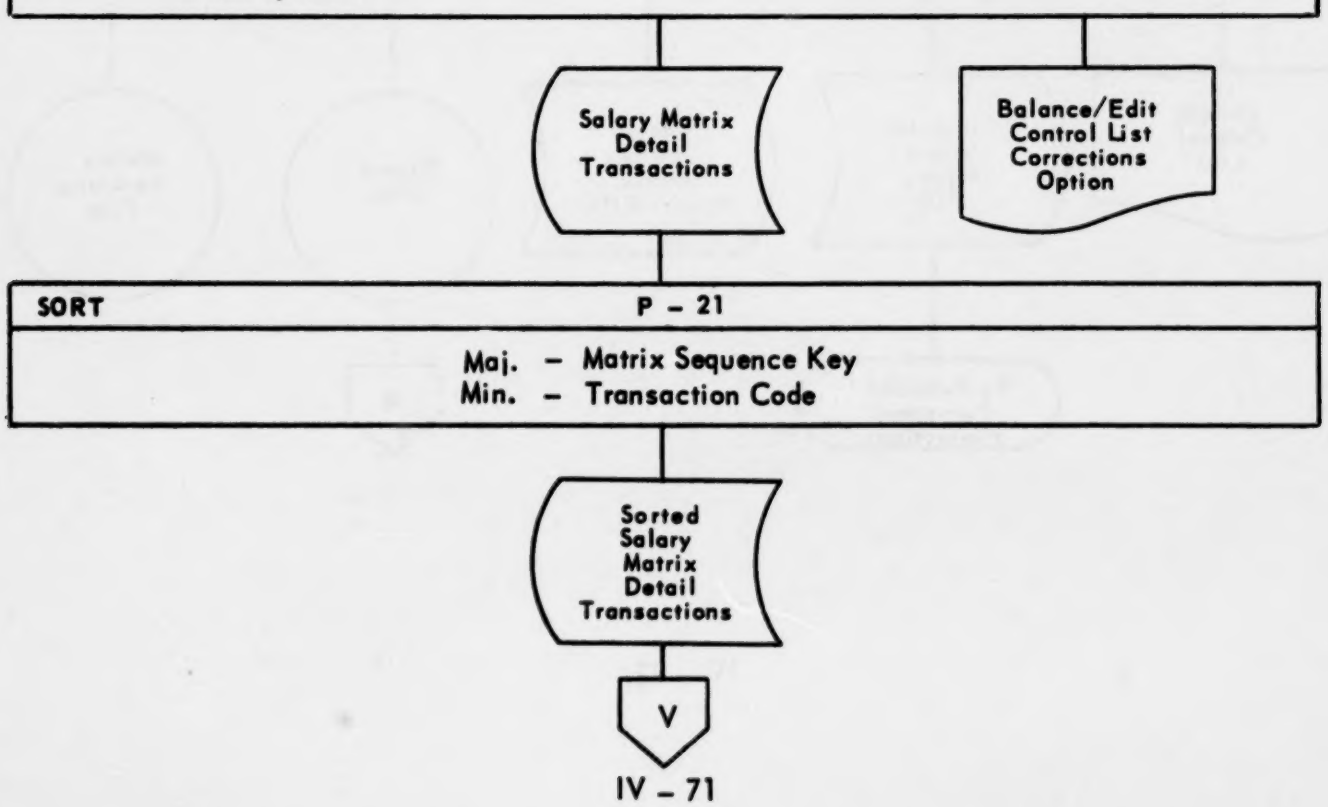

S
Personnel/ Payroll Master File
Assignment Trailer Records
MERGE
P – 17
(ANNUAL)
Merge Assignment Trailer Records onto the Personnel/Payroll Master File
Personnel/ Payroll Master File
File

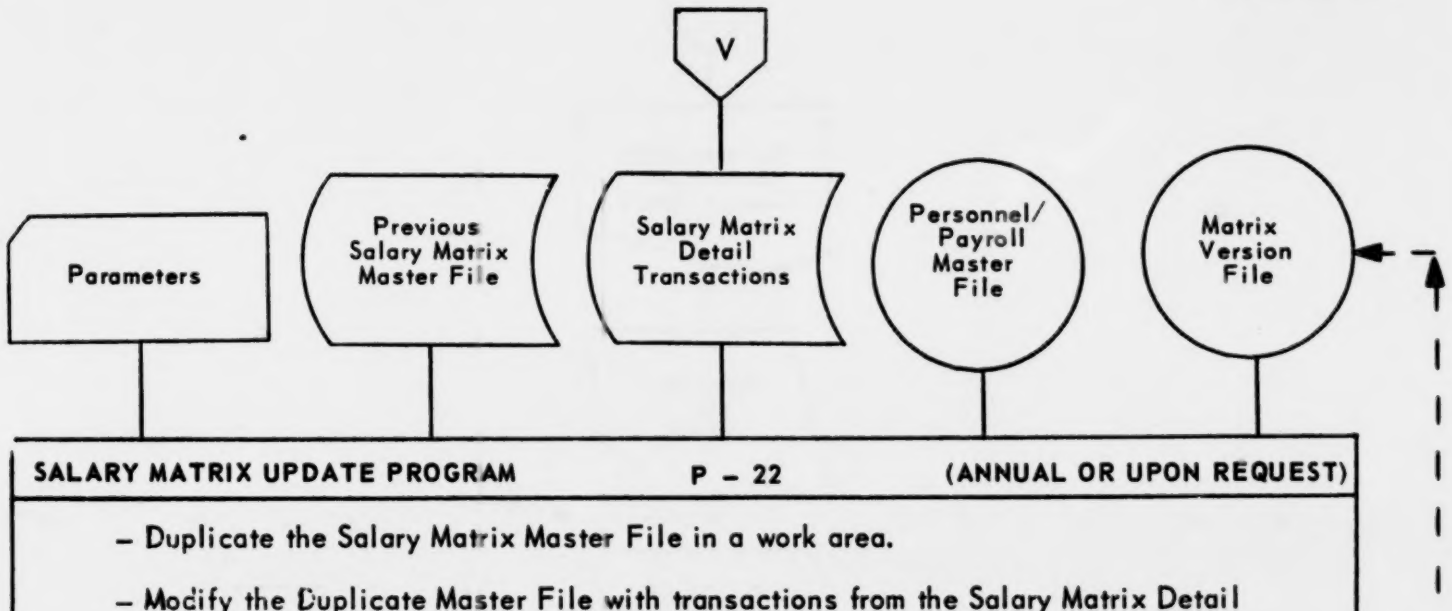

Salary Matrix Transactions
Key Punch and Key Verify
Salary Matrix Transactions
CARD TO TAPE
P – 18
(ANNUAL OR UPON REQUEST)
Create an 80 character card image on Magnetic Tape
Salary Matrix Transactions
SALARY MATRIX BALANCE/EDIT, CAPTURE OPTION
P – 19
(ANNUAL OR UPON REQUEST)
– Check all fields for invalid characters and missing information.
– Validate all codes by consulting tables.
– Accumulate control totals.
– Write the Salary Matrix Detail Transaction File with each transaction sequentally numbered; flag all fields which must be corrected.
– Print the Balance/Edit Control List with Control Totals, show each transaction with coded error messages, where necessary, indicating where the transaction failed to meet the edit criteria.
Balance/Edit Control List Capture Option
Salary Matrix Detail Transactions
T
U



SALARY MATRIX BALANCE/EDIT, CORRECTION OPTION P – 20 (ANNUAL OR UPON REQUEST)

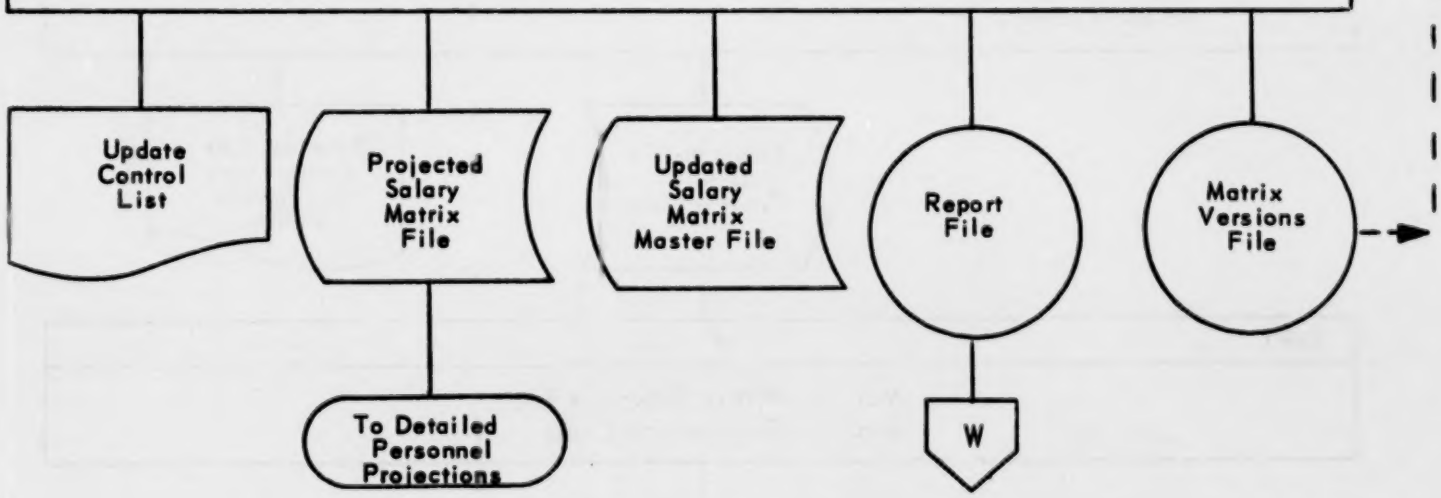
- Process each correction transaction through all routines described in the initial "Capture Option".
- Apply the edited corrections to the Salary Matrix Detail Transaction File.
- Print the Balance/Edit Control List, Correction Option which is basically the same as the Capture Option except that it also shows which transactions were corrected and flags any transaction which should have been corrected and was not.
- The Correction Routine should be repeated until all transactions are acceptable to the system.



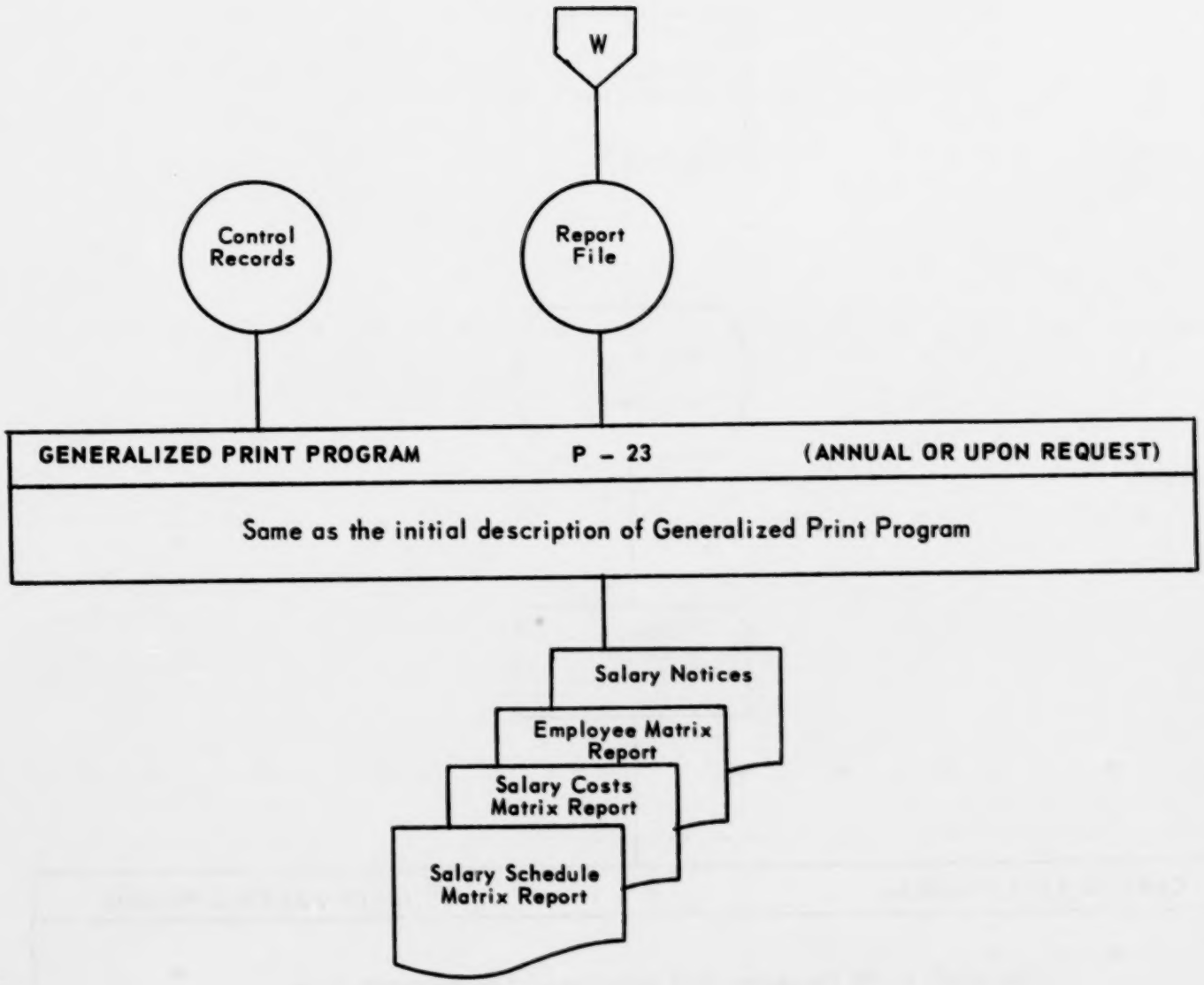


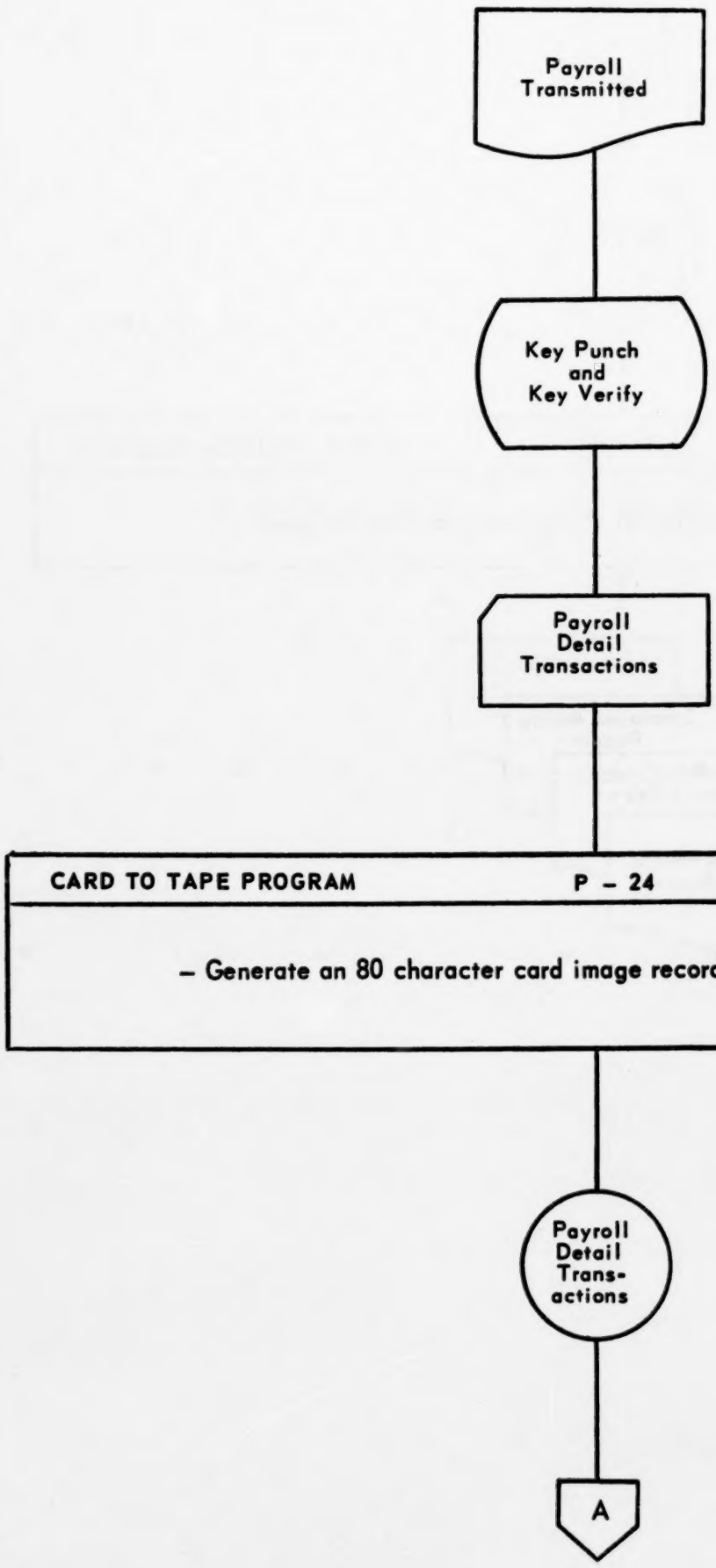
SALARY MATRIX UPDATE PROGRAM **P – 22** **(ANNUAL OR UPON REQUEST)**

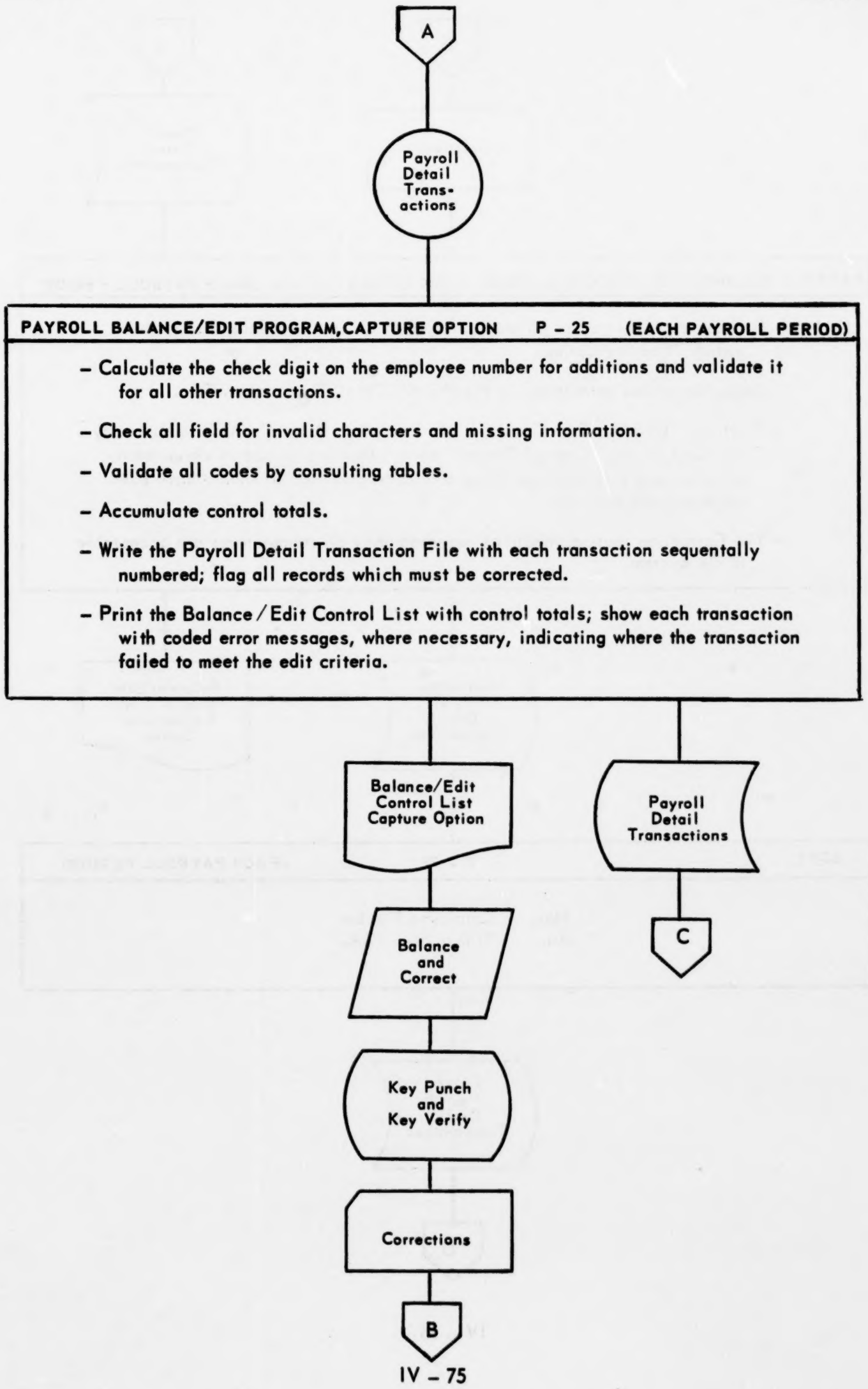
- Duplicate the Salary Matrix Master File in a work area.
- Modify the Duplicate Master File with transactions from the Salary Matrix Detail File; individual rates segments of the file or the entire file can be modified by overlaying the fields, algebraic addition, or multiplying by a percentage. This creates a new "Version".
- Copy the updated Duplicate Master onto the end of the Matrix Version File, assign it to the next sequential number which will be the version number.
- Overlay the Master File with the desired version from the Matrix Version File if requested in the Parameter Cards.
- Write a Projected Salary Matrix File from the desired version on the Matrix Version File if requested in the Parameter Cards.
- Create the Salary Schedule Matrix Report, Salary Costs Matrix Report and Employee Matrix Report and write them out on the Report File; they can be generated from the Personnel/Payroll Master and the Matrix Version File; create Salary Notices if requested in the Parameter Cards.
- Note: More than one Version can be created in a run and reports for more than one Version can be generated.
- Print the Update Control List.



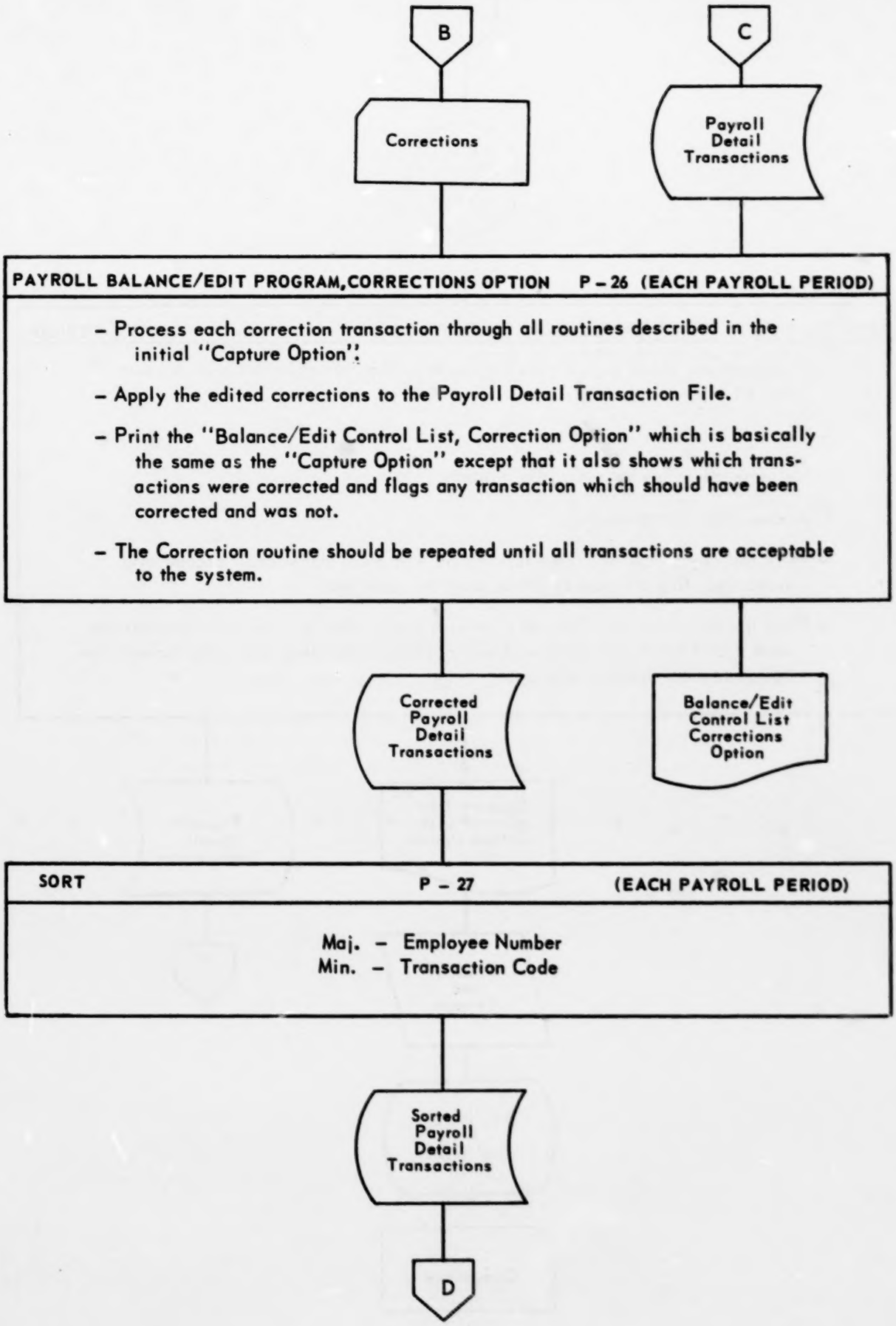
81


W
Control Records
Report File
GENERALIZED PRINT PROGRAM
P – 23
(ANNUAL OR UPON REQUEST)
Same as the initial description of Generalized Print Program
Salary Notices
Employee Matrix Report
Salary Costs Matrix Report
Salary Schedule Matrix Report

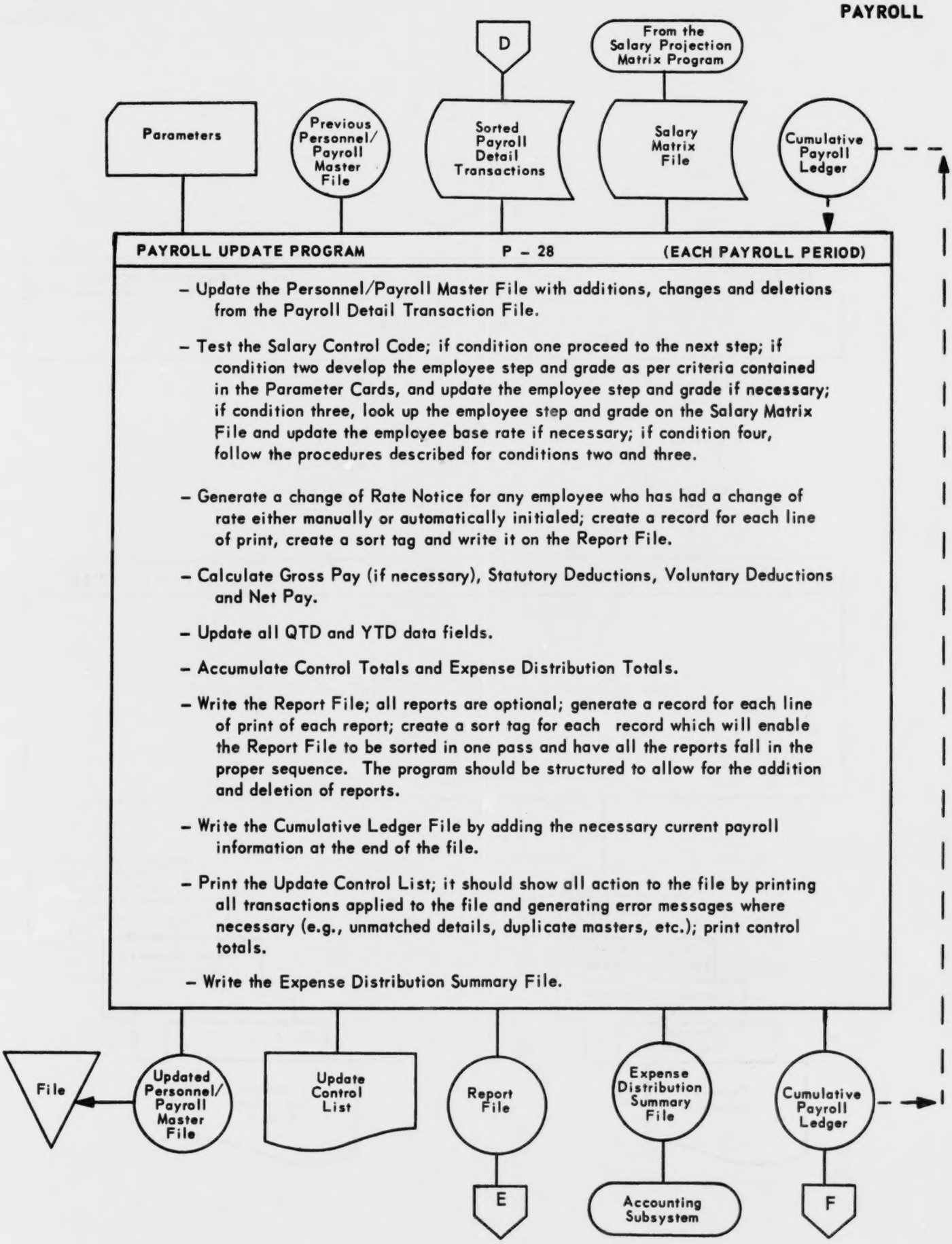

Payroll Transmitted
Key Punch and Key Verify
Payroll Detail Transactions
CARD TO TAPE PROGRAM
P – 24
(EACH PAYROLL PERIOD)
– Generate an 80 character card image record on magnetic tape.
Payroll Detail Trans-actions
A

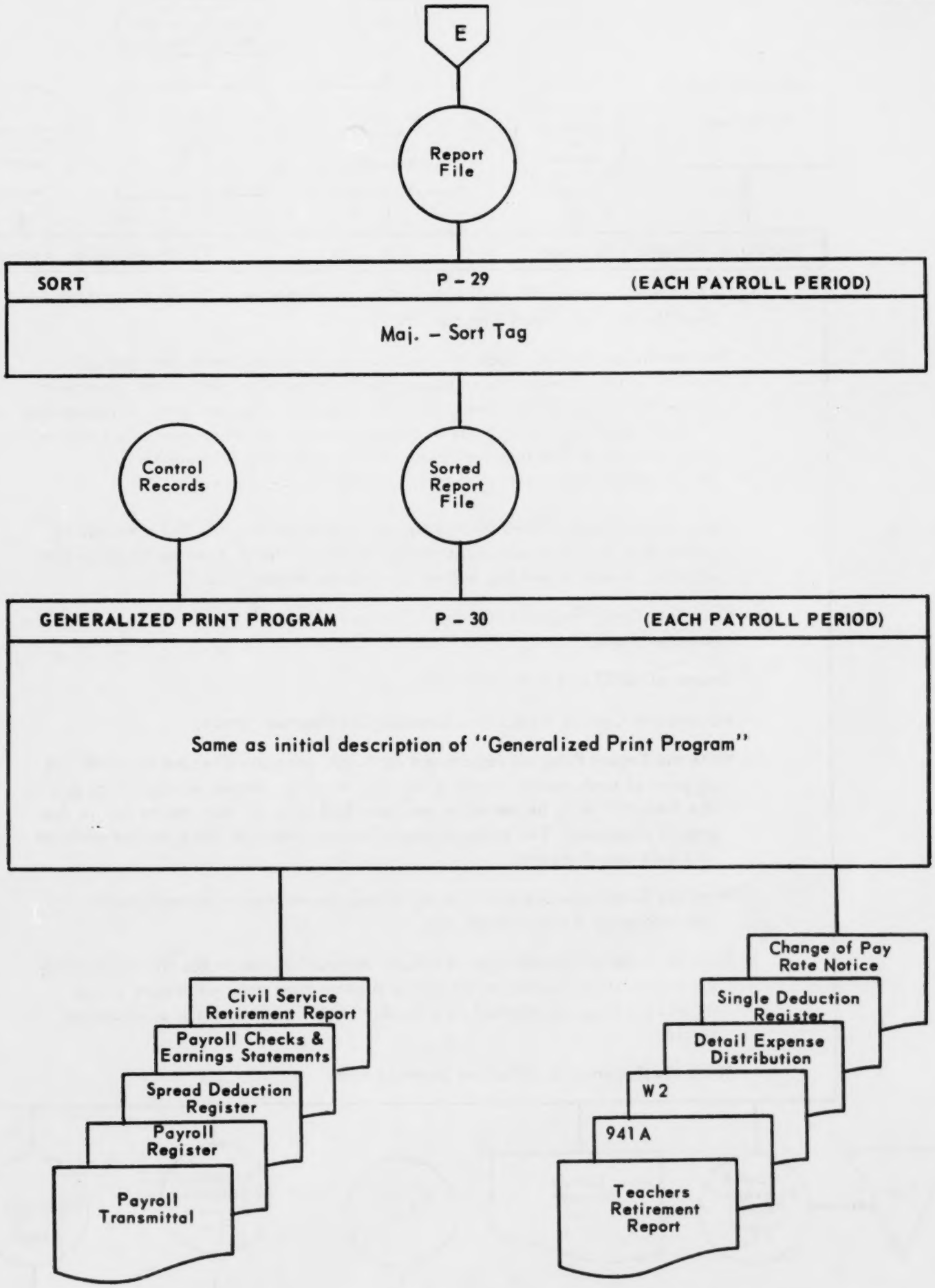

A
Payroll Detail Trans-actions
PAYROLL BALANCE/EDIT PROGRAM, CAPTURE OPTION P – 25 (EACH PAYROLL PERIOD)
– Calculate the check digit on the employee number for additions and validate it for all other transactions.
– Check all field for invalid characters and missing information.
– Validate all codes by consulting tables.
– Accumulate control totals.
– Write the Payroll Detail Transaction File with each transaction sequentially numbered; flag all records which must be corrected.
– Print the Balance / Edit Control List with control totals; show each transaction with coded error messages, where necessary, indicating where the transaction failed to meet the edit criteria.
Balance/Edit Control List Capture Option
Payroll Detail Transactions
Balance and Correct
C
Key Punch and Key Verify
Corrections
B

IV – 75

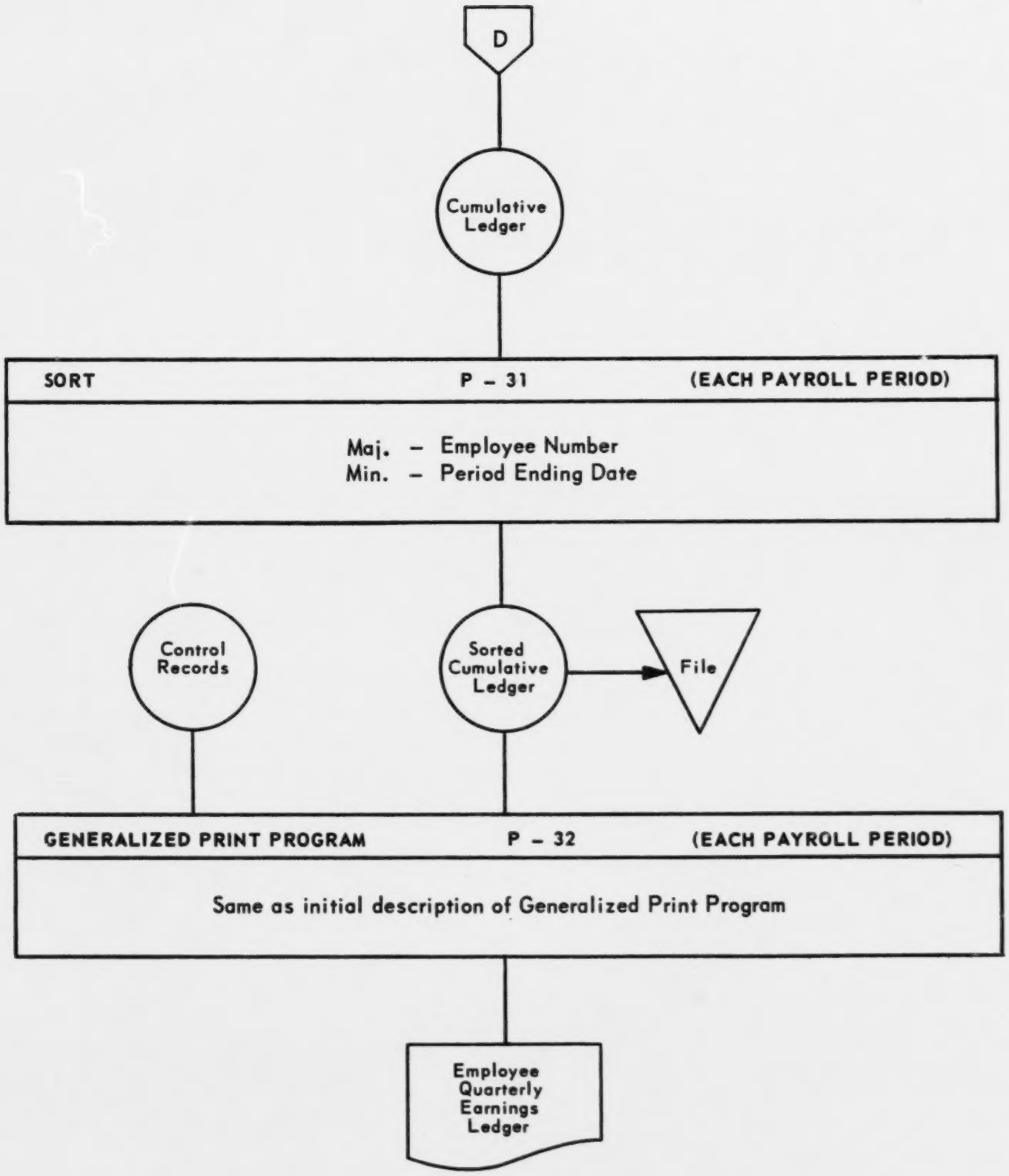

B
C
Corrections
Payroll Detail Transactions
PAYROLL BALANCE/EDIT PROGRAM, CORRECTIONS OPTION P – 26 (EACH PAYROLL PERIOD)
– Process each correction transaction through all routines described in the initial "Capture Option".
– Apply the edited corrections to the Payroll Detail Transaction File.
– Print the "Balance/Edit Control List, Correction Option" which is basically the same as the "Capture Option" except that it also shows which transactions were corrected and flags any transaction which should have been corrected and was not.
– The Correction routine should be repeated until all transactions are acceptable to the system.
Corrected Payroll Detail Transactions
Balance/Edit Control List Corrections Option
SORT P – 27 (EACH PAYROLL PERIOD)
Maj. – Employee Number
Min. – Transaction Code
Sorted Payroll Detail Transactions
D

85


D
From the Salary Projection Matrix Program
Parameters
Previous Personnel/ Payroll Master File
Sorted Payroll Detail Transactions
Salary Matrix File
Cumulative Payroll Ledger
PAYROLL UPDATE PROGRAM
P – 28
(EACH PAYROLL PERIOD)
– Update the Personnel/Payroll Master File with additions, changes and deletions from the Payroll Detail Transaction File.
– Test the Salary Control Code; if condition one proceed to the next step; if condition two develop the employee step and grade as per criteria contained in the Parameter Cards, and update the employee step and grade if necessary; if condition three, look up the employee step and grade on the Salary Matrix File and update the employee base rate if necessary; if condition four, follow the procedures described for conditions two and three.
– Generate a change of Rate Notice for any employee who has had a change of rate either manually or automatically initialed; create a record for each line of print, create a sort tag and write it on the Report File.
– Calculate Gross Pay (if necessary), Statutory Deductions, Voluntary Deductions and Net Pay.
– Update all QTD and YTD data fields.
– Accumulate Control Totals and Expense Distribution Totals.
– Write the Report File; all reports are optional; generate a record for each line of print of each report; create a sort tag for each record which will enable the Report File to be sorted in one pass and have all the reports fall in the proper sequence. The program should be structured to allow for the addition and deletion of reports.
– Write the Cumulative Ledger File by adding the necessary current payroll information at the end of the file.
– Print the Update Control List; it should show all action to the file by printing all transactions applied to the file and generating error messages where necessary (e.g., unmatched details, duplicate masters, etc.); print control totals.
– Write the Expense Distribution Summary File.
File
Updated Personnel/ Payroll Master File
Update Control List
Report File
Expense Distribution Summary File
Cumulative Payroll Ledger
E
Accounting Subsystem
F


E
Report File
SORT
P – 29
(EACH PAYROLL PERIOD)
Maj. – Sort Tag
Control Records
Sorted Report File
GENERALIZED PRINT PROGRAM
P – 30
(EACH PAYROLL PERIOD)
Same as initial description of "Generalized Print Program"
Civil Service Retirement Report
Payroll Checks & Earnings Statements
Spread Deduction Register
Payroll Register
Payroll Transmittal
Change of Pay Rate Notice
Single Deduction Register
Detail Expense Distribution
W 2
941 A
Teachers Retirement Report

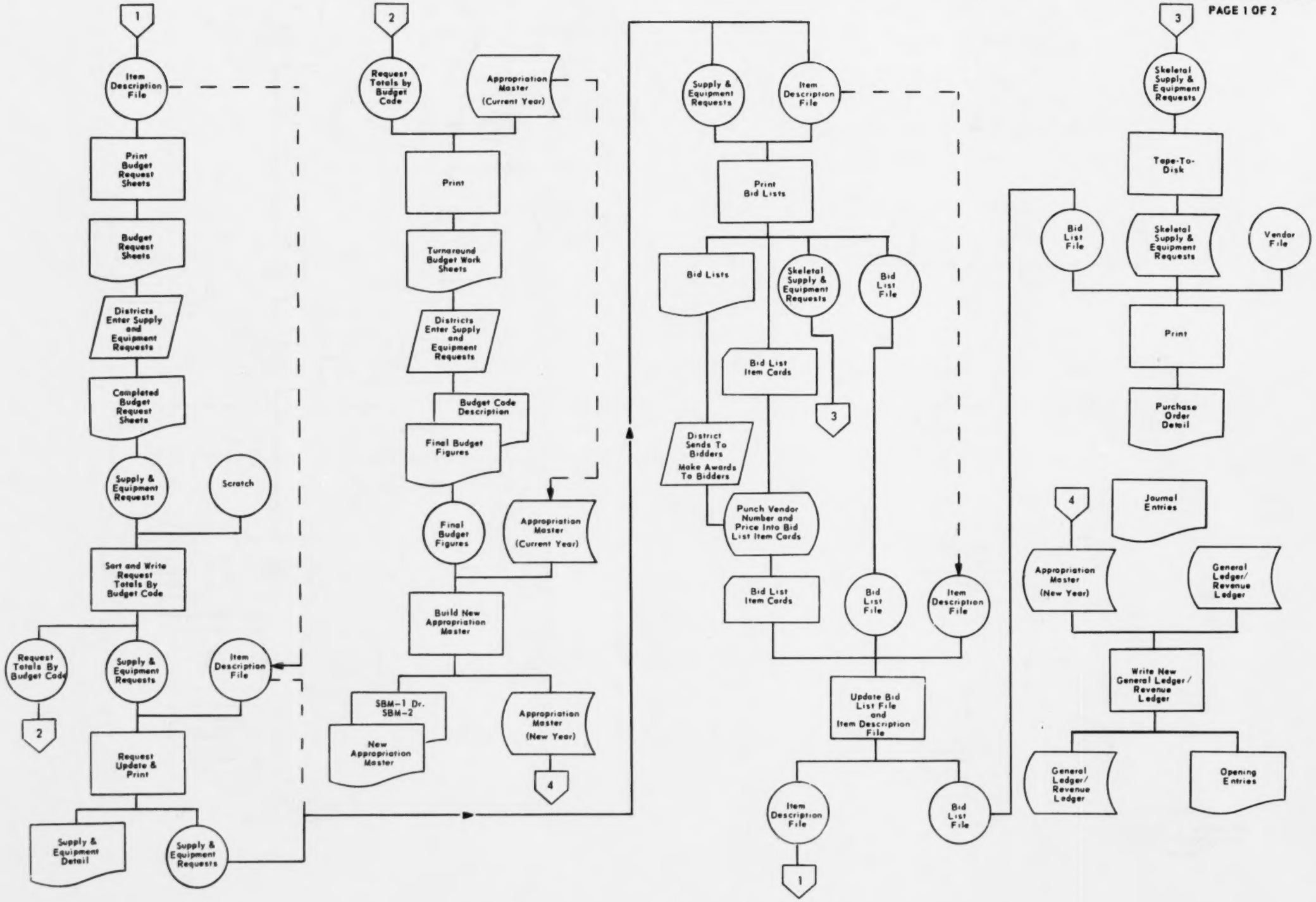
87

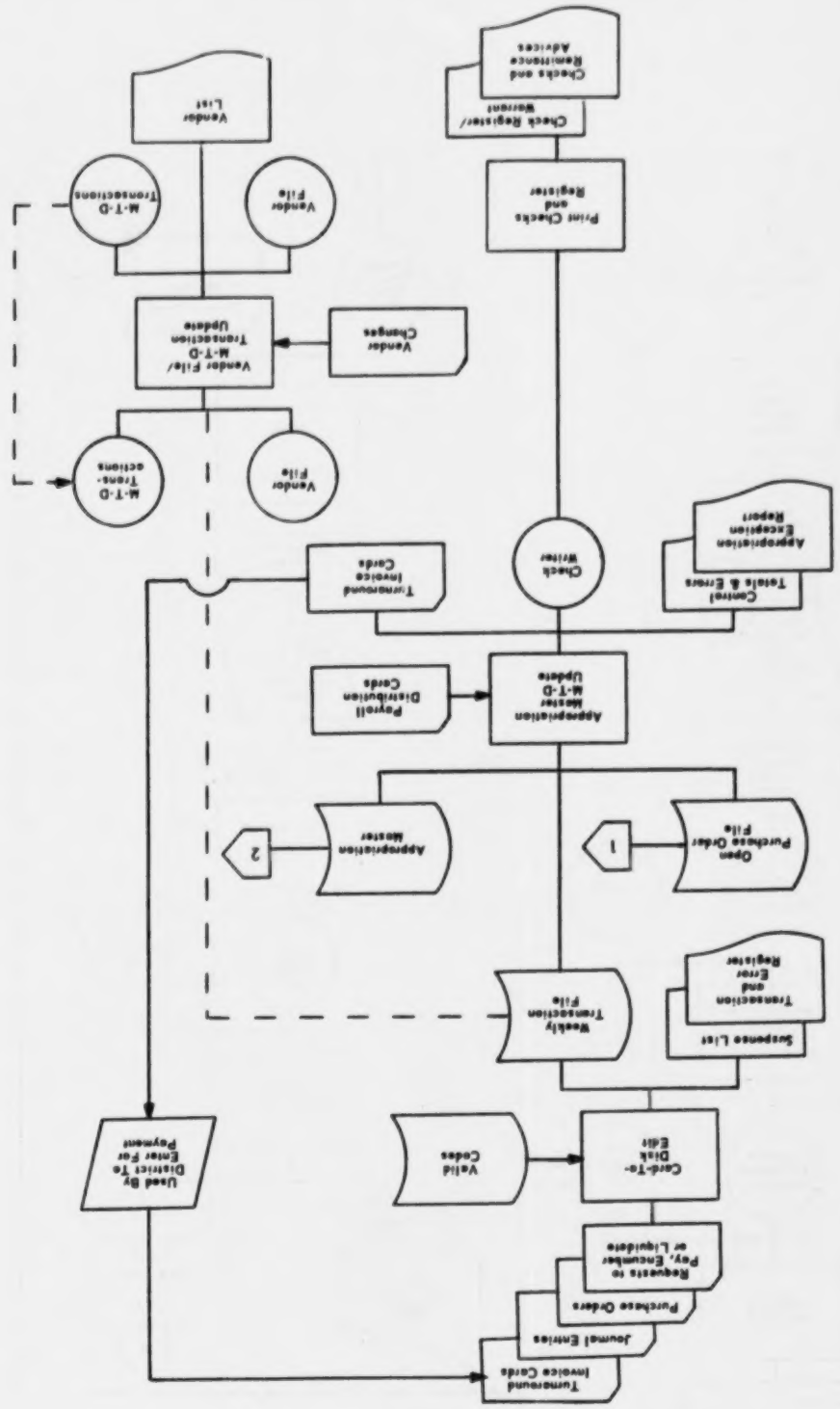

D
Cumulative Ledger
SORT
P – 31
(EACH PAYROLL PERIOD)
Maj. – Employee Number
Min. – Period Ending Date
Control Records
Sorted Cumulative Ledger
File
GENERALIZED PRINT PROGRAM
P – 32
(EACH PAYROLL PERIOD)
Same as initial description of Generalized Print Program
Employee Quarterly Earnings Ledger

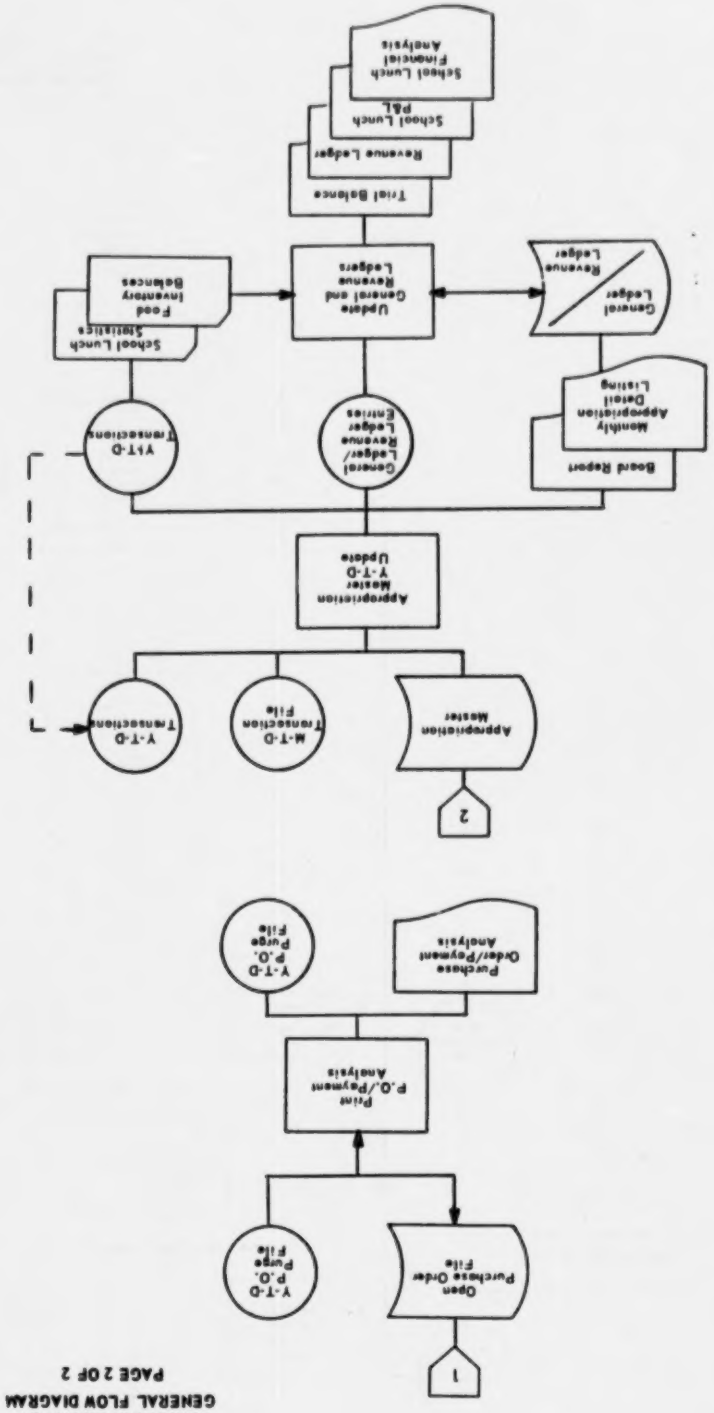
3. Financial Subsystem

- General Flow Diagram
- Processing Flow Charts

NYSEIS
FINANCIAL SUBSYSTEM
GENERAL FLOW DIAGRAM
PAGE 1 OF 2







NYSEIS
FINANCIAL SUBSYSTEM
GENERAL FLOW DIAGRAM
PAGE 2 OF 2

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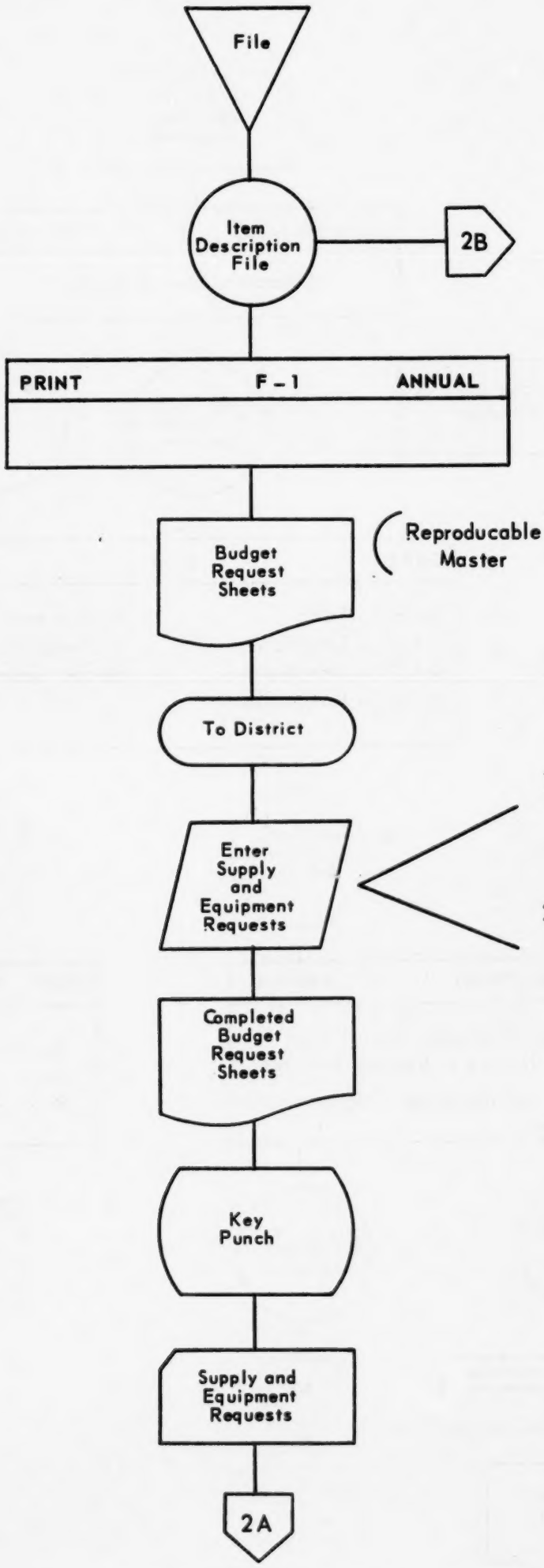
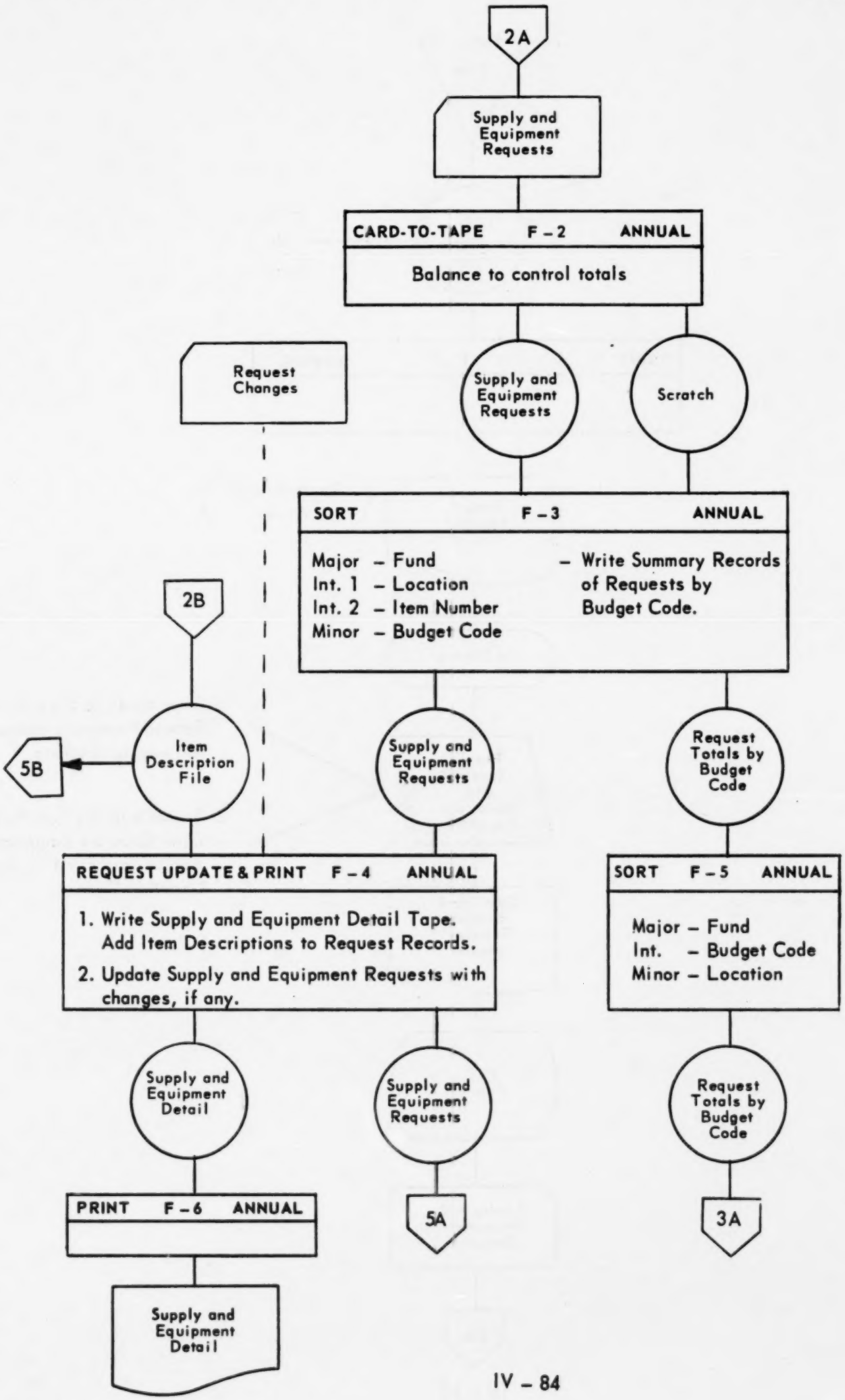
PROCESSING FLOW CHARTS:

FINANCIAL SUBSYSTEM

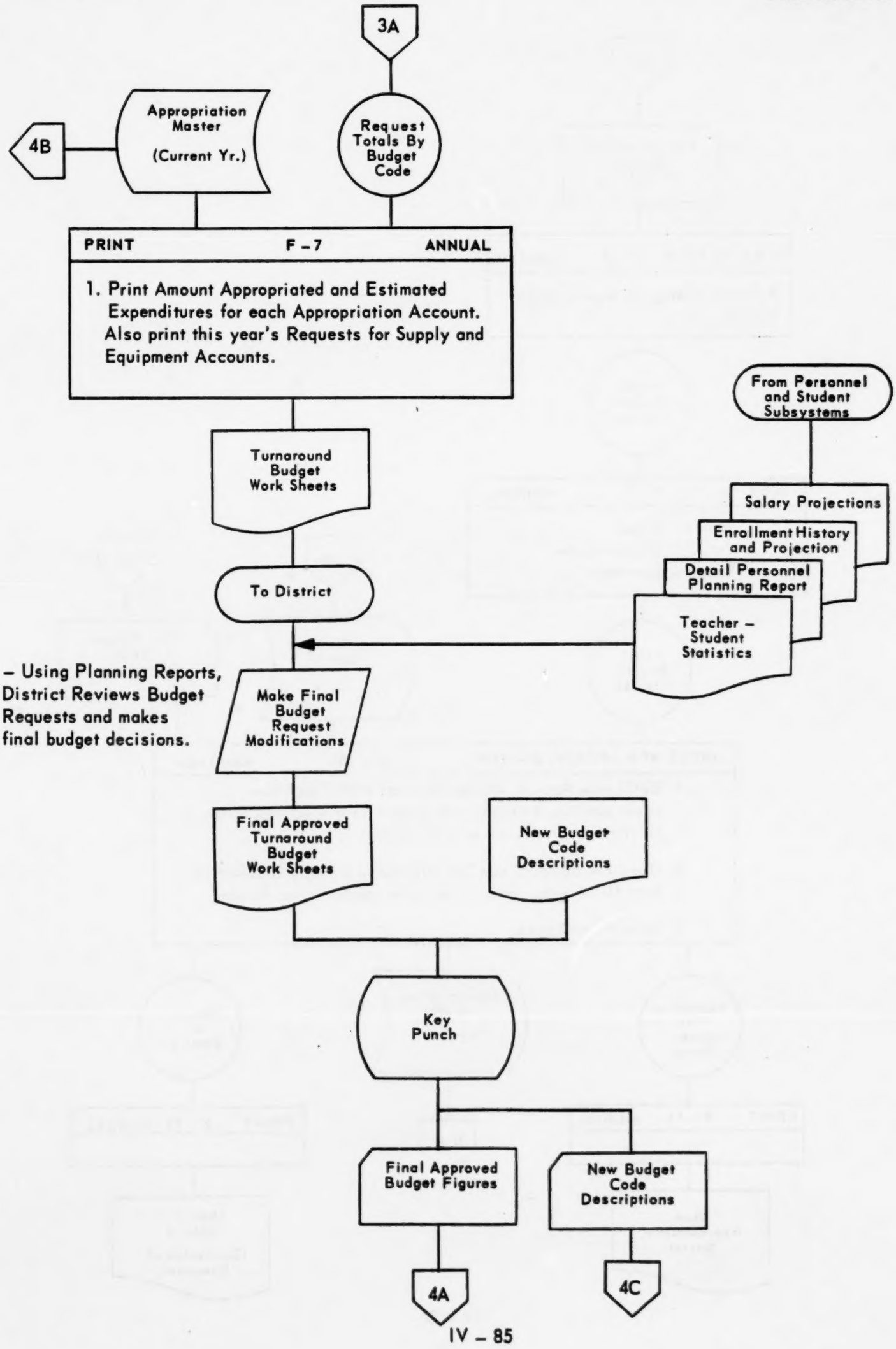
NYSEIS
BUDGET/BID LIST
PREPARATION

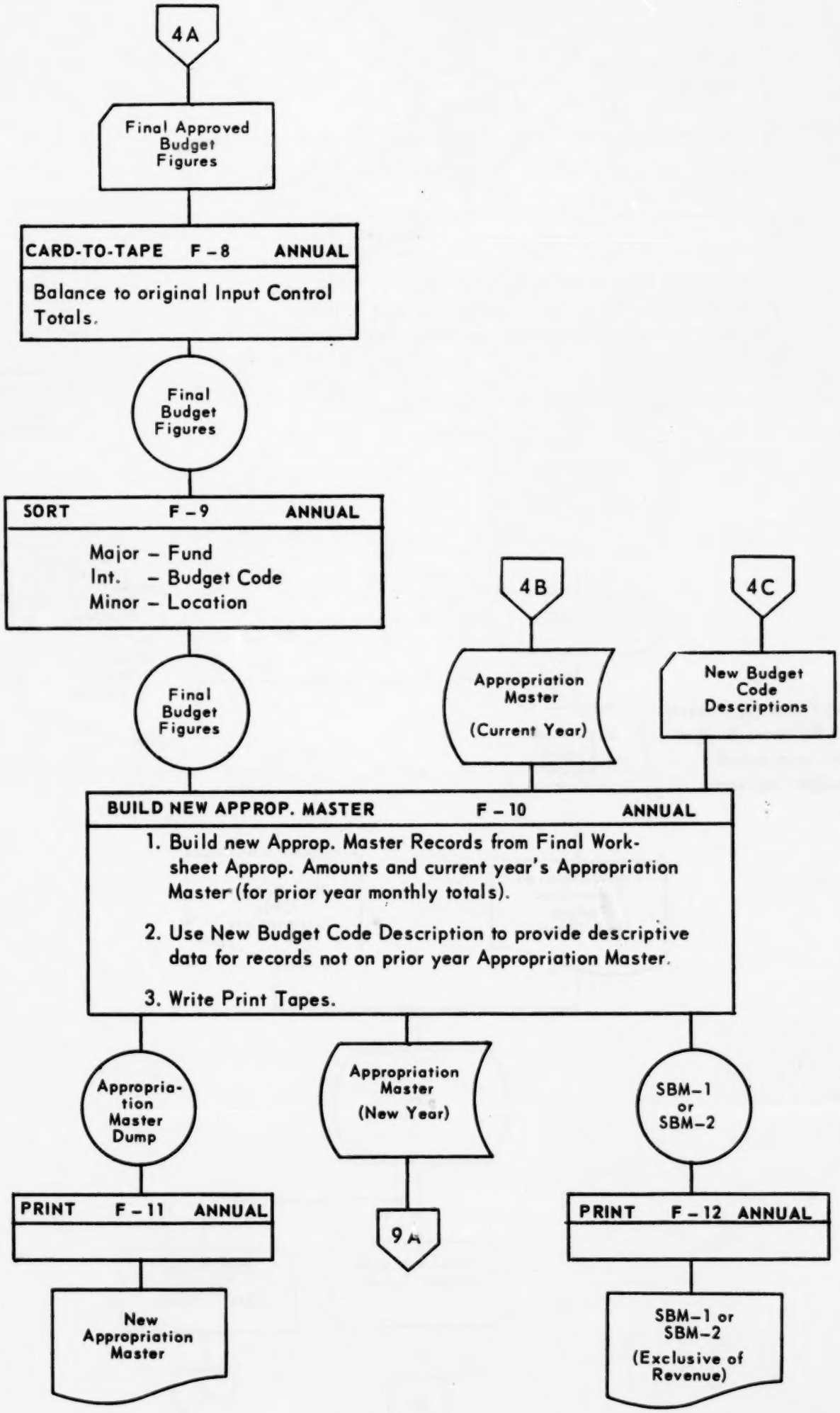



2A
Supply and Equipment Requests
CARD-TO-TAPE F – 2 ANNUAL
Balance to control totals
Request Changes
Supply and Equipment Requests
Scratch
SORT F – 3 ANNUAL
Major – Fund
Int. 1 – Location
Int. 2 – Item Number
Minor – Budget Code
– Write Summary Records of Requests by Budget Code.
2B
5B
Item Description File
Supply and Equipment Requests
Request Totals by Budget Code
REQUEST UPDATE & PRINT F – 4 ANNUAL
1. Write Supply and Equipment Detail Tape. Add Item Descriptions to Request Records.
2. Update Supply and Equipment Requests with changes, if any.
SORT F – 5 ANNUAL
Major – Fund
Int. – Budget Code
Minor – Location
Supply and Equipment Detail
Supply and Equipment Requests
Request Totals by Budget Code
PRINT F – 6 ANNUAL
5A
3A
Supply and Equipment Detail

93

NYSEIS
BUDGET/BID LIST PREPARATION


3A
4B
Appropriation Master (Current Yr.)
Request Totals By Budget Code
PRINT F – 7 ANNUAL
1. Print Amount Appropriated and Estimated Expenditures for each Appropriation Account. Also print this year's Requests for Supply and Equipment Accounts.
Turnaround Budget Work Sheets
To District
From Personnel and Student Subsystems
Salary Projections
Enrollment History and Projection
Detail Personnel Planning Report
Teacher – Student Statistics
– Using Planning Reports, District Reviews Budget Requests and makes final budget decisions.
Make Final Budget Request Modifications
Final Approved Turnaround Budget Work Sheets
New Budget Code Descriptions
Key Punch
Final Approved Budget Figures
New Budget Code Descriptions
4A
4C


4A
Final Approved Budget Figures
CARD-TO-TAPE F – 8 ANNUAL
Balance to original Input Control Totals.
Final Budget Figures
SORT F – 9 ANNUAL
Major – Fund
Int. – Budget Code
Minor – Location
Final Budget Figures
4B
Appropriation Master (Current Year)
4C
New Budget Code Descriptions
BUILD NEW APPROP. MASTER F – 10 ANNUAL
1. Build new Approp. Master Records from Final Work-sheet Approp. Amounts and current year's Appropriation Master (for prior year monthly totals).
2. Use New Budget Code Description to provide descriptive data for records not on prior year Appropriation Master.
3. Write Print Tapes.
Appropria-tion Master Dump
Appropriation Master (New Year)
SBM–1 or SBM–2
PRINT F – 11 ANNUAL
9A
PRINT F – 12 ANNUAL
New Appropriation Master
SBM–1 or SBM–2 (Exclusive of Revenue)

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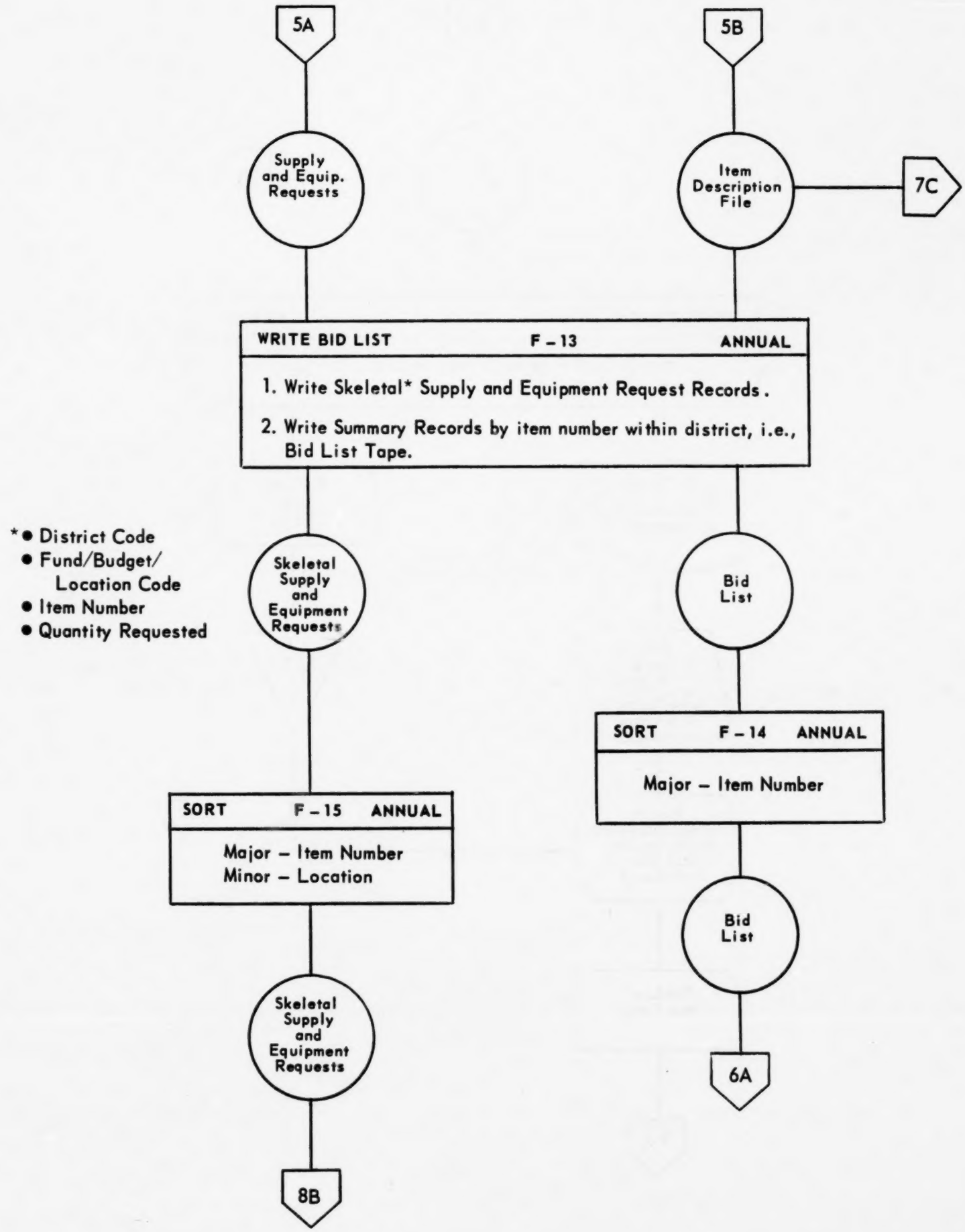
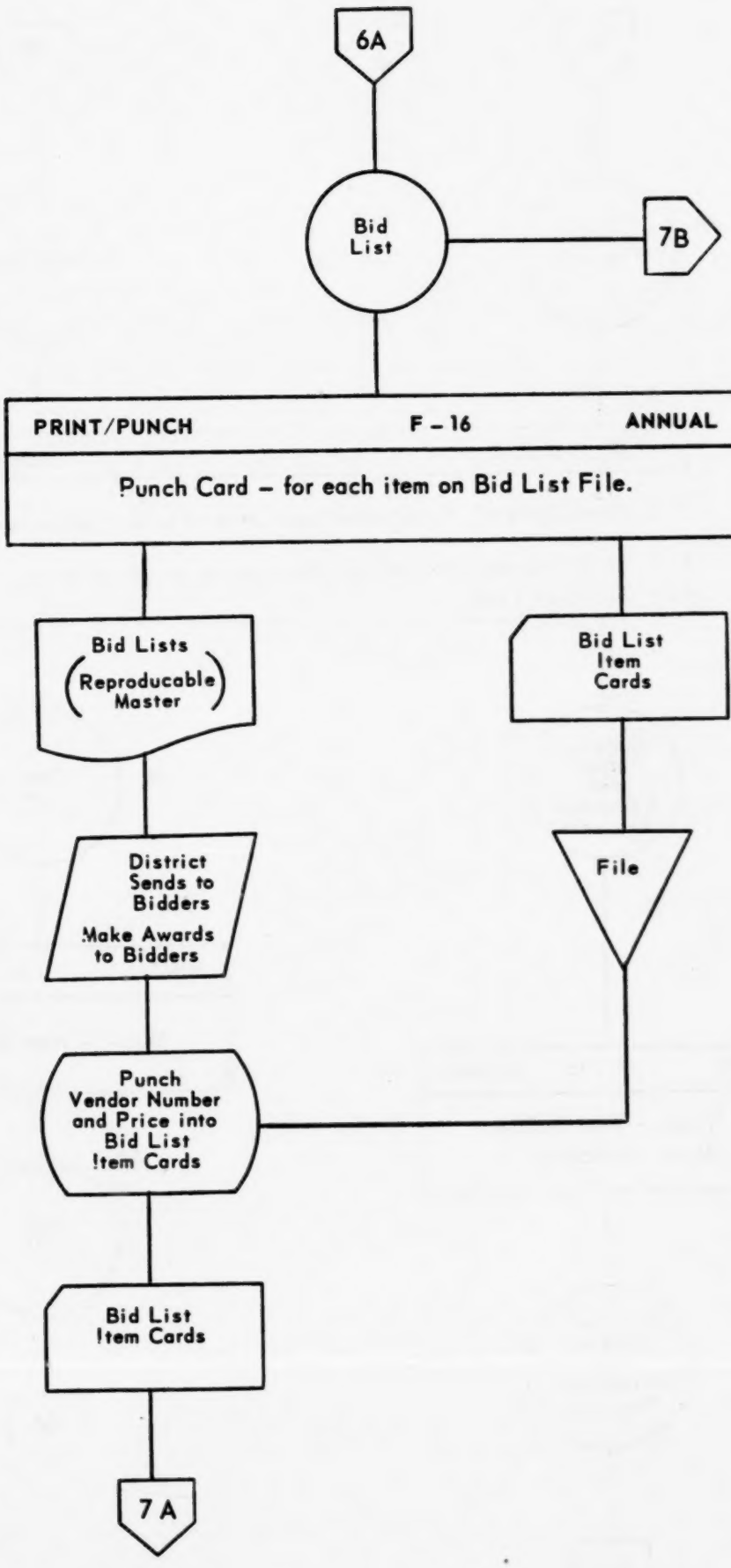
NYSEIS
BUDGET/BID LIST
PREPARATION

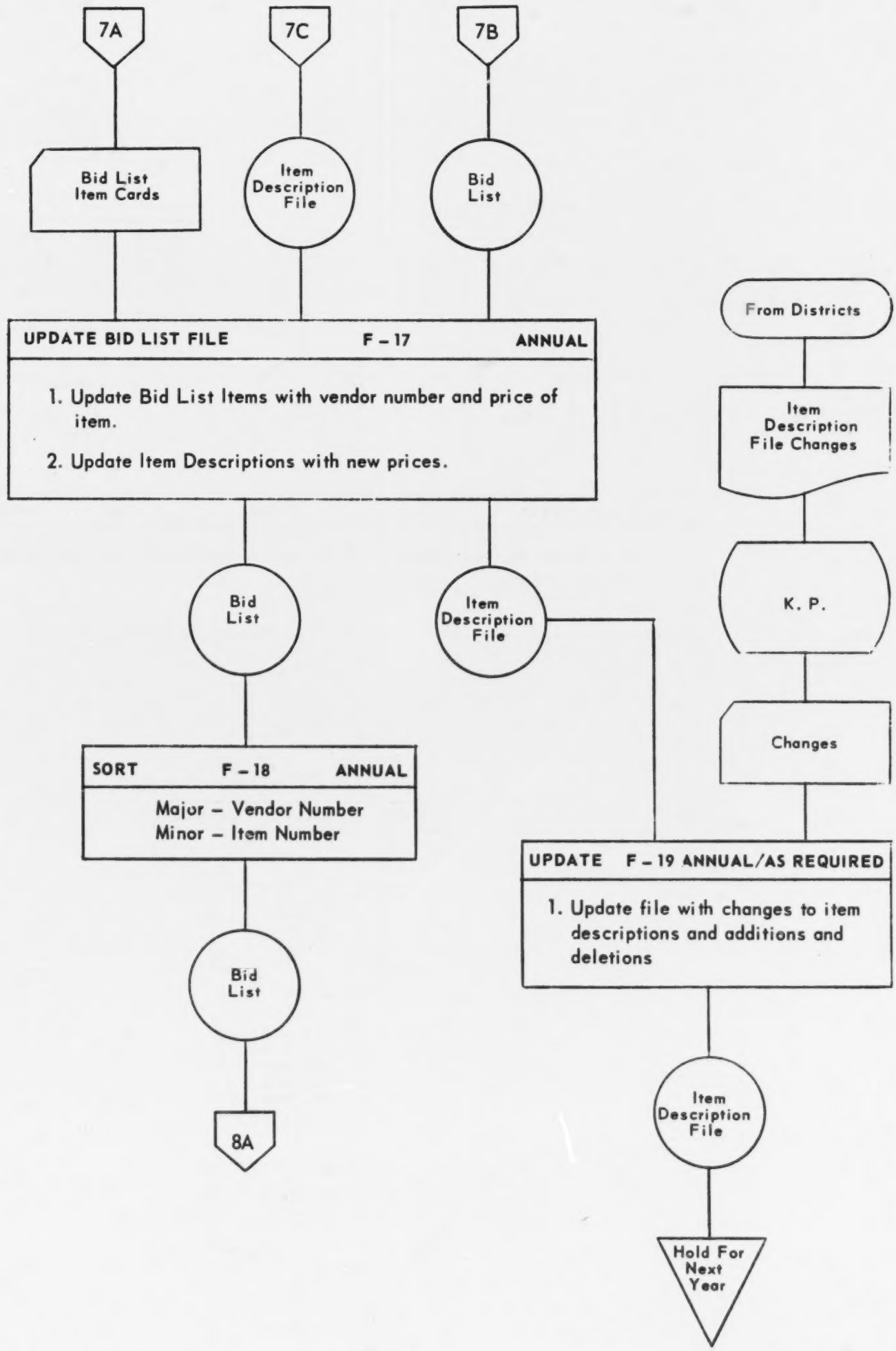


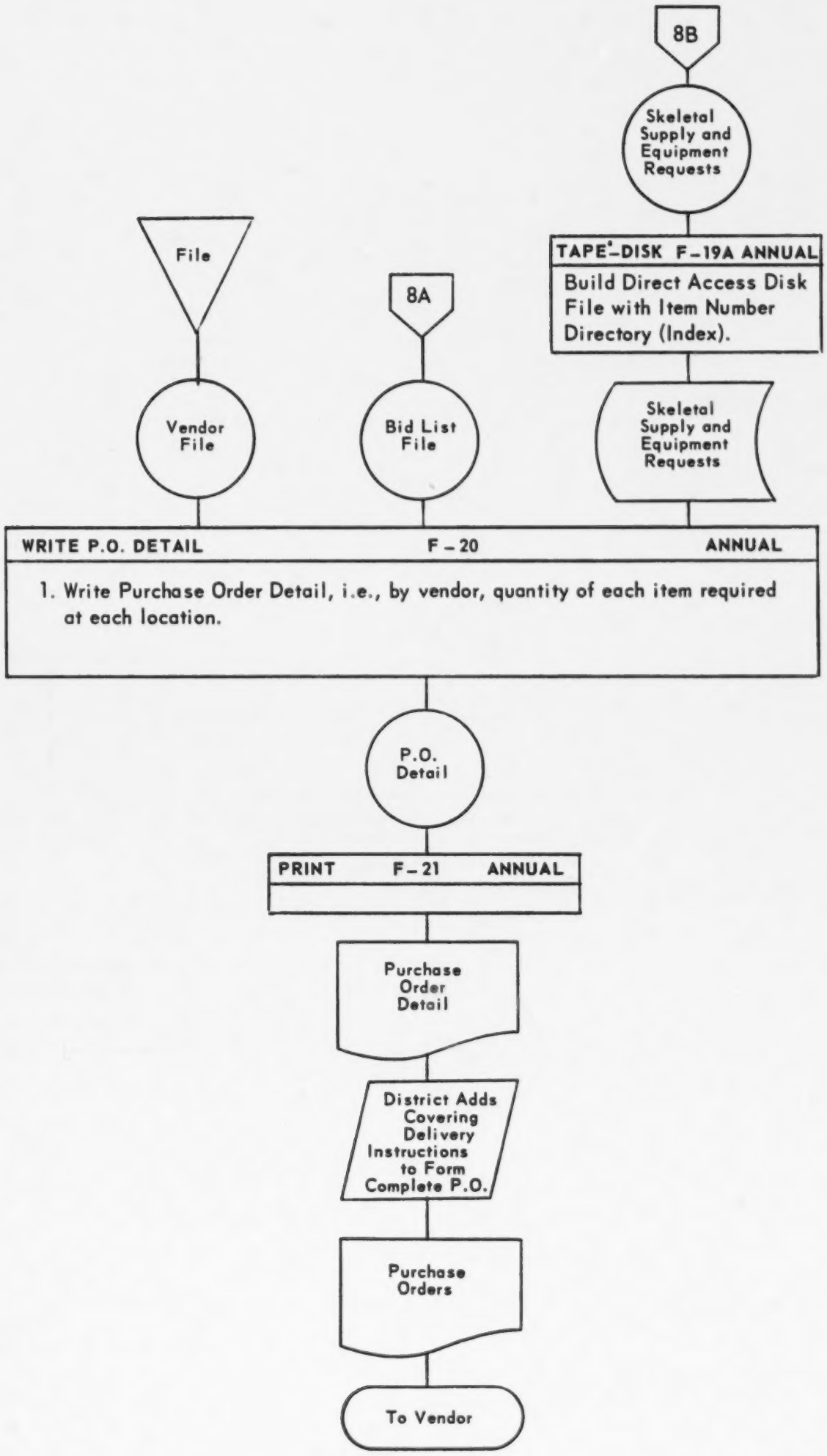
96

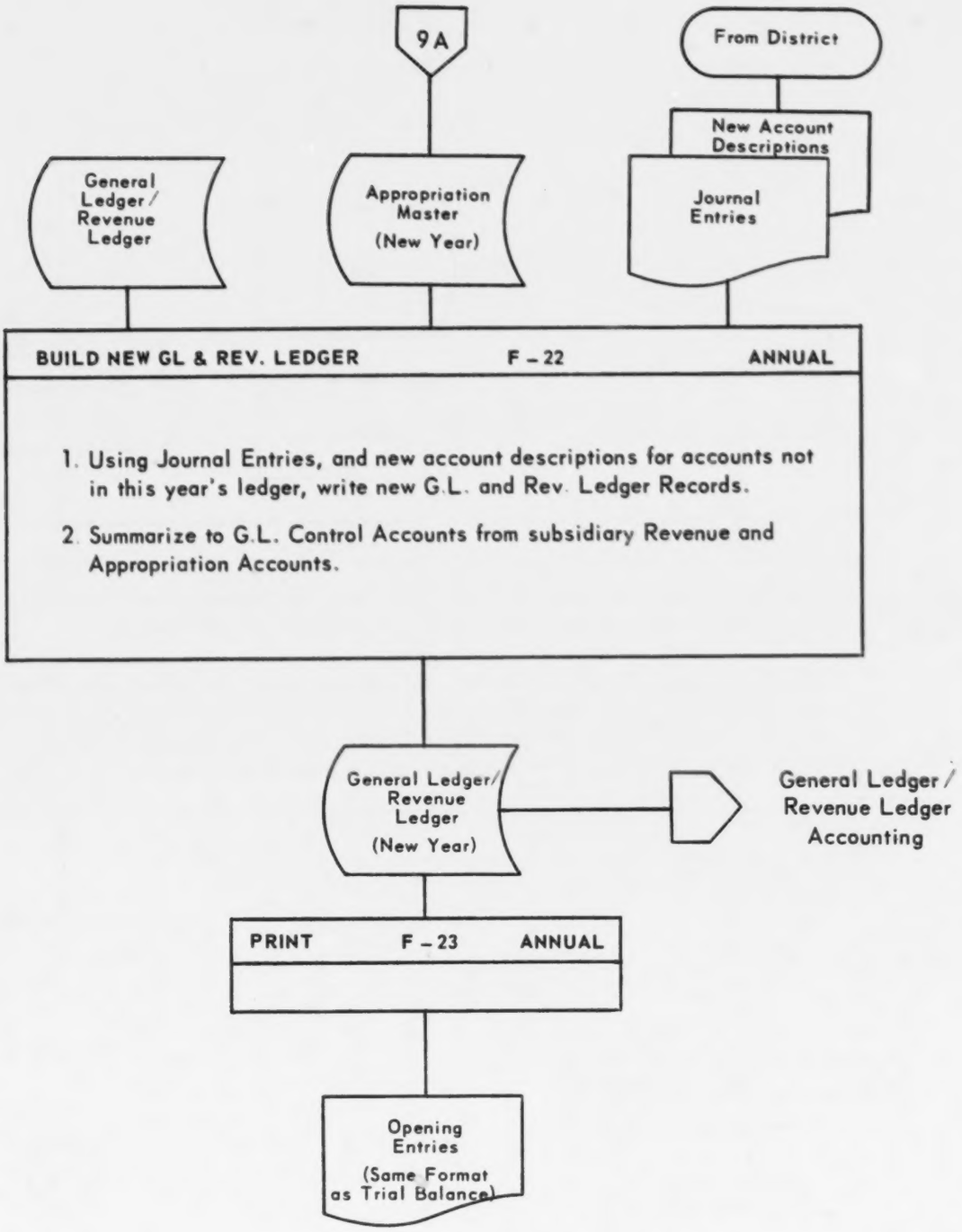

6A
Bid List
7B
PRINT/PUNCH
F – 16
ANNUAL
Punch Card – for each item on Bid List File.
Bid Lists (Reproducable Master)
Bid List Item Cards
District Sends to Bidders
Make Awards to Bidders
File
Punch Vendor Number and Price into Bid List Item Cards
Bid List Item Cards
7A

97

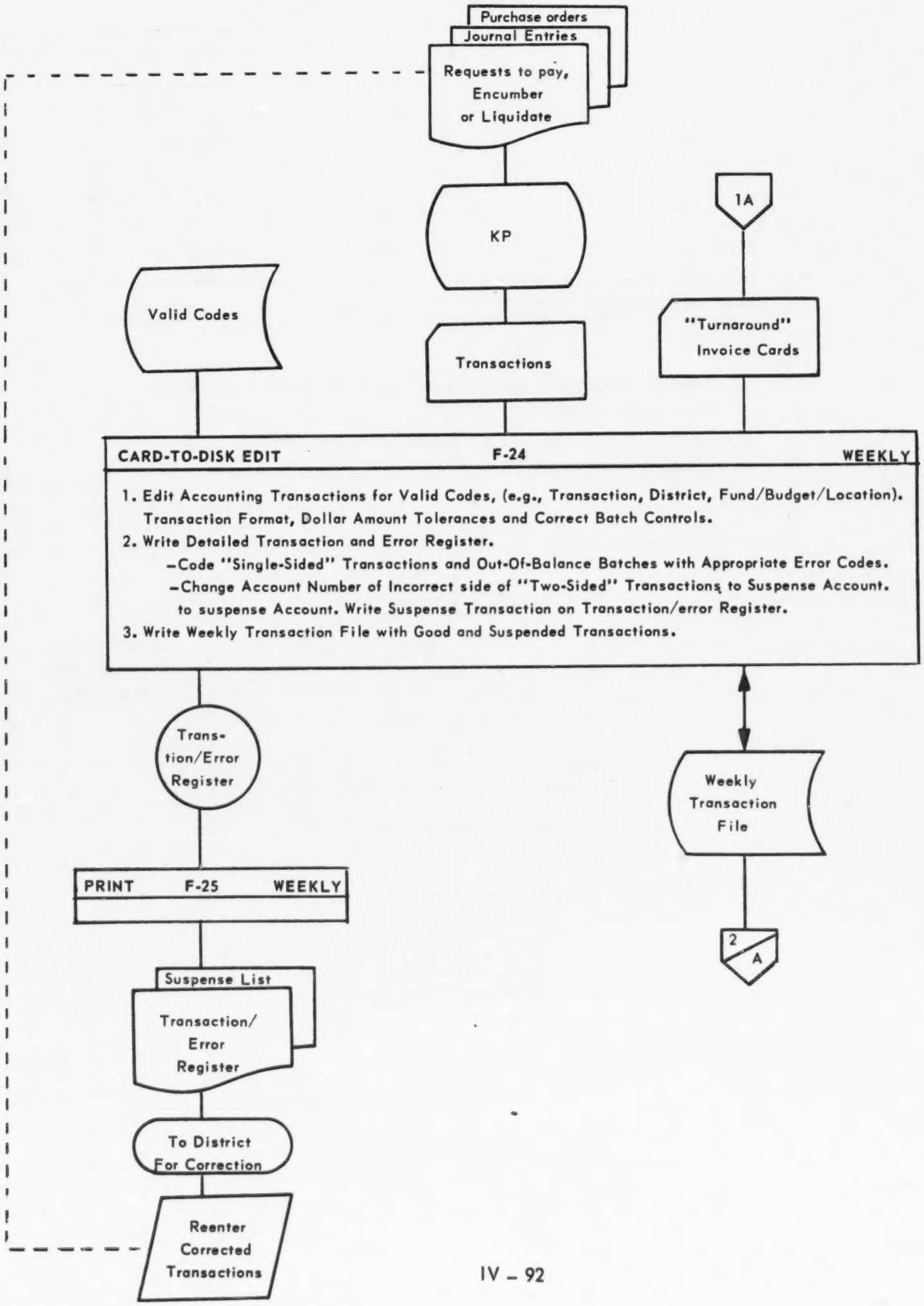
NYSEIS
BUDGET / BID LIST
PREPARATION



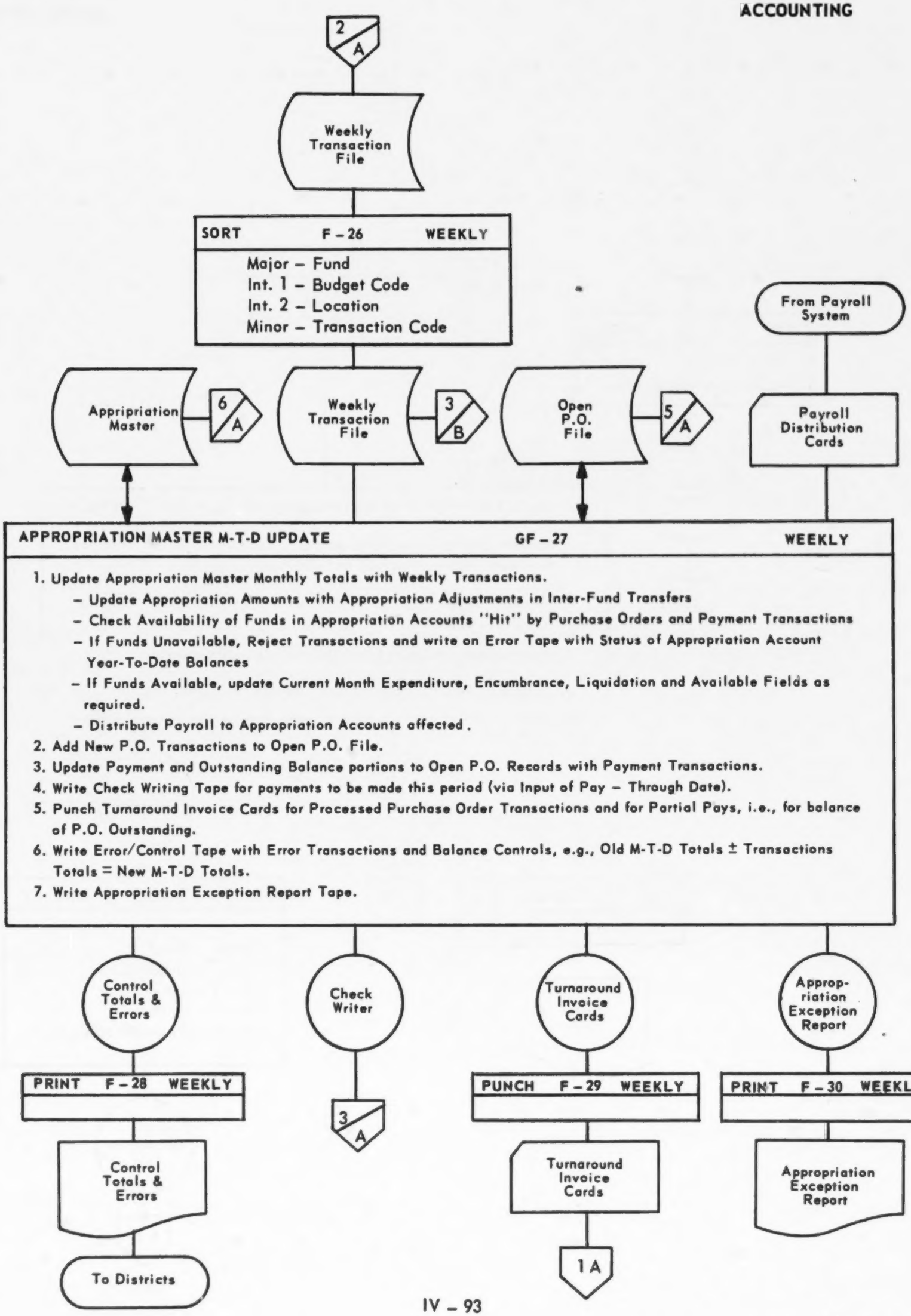

8B
Skeletal Supply and Equipment Requests
TAPE-DISK F-19A ANNUAL
Build Direct Access Disk File with Item Number Directory (Index).
File
8A
Vendor File
Bid List File
Skeletal Supply and Equipment Requests
WRITE P.O. DETAIL F-20 ANNUAL
1. Write Purchase Order Detail, i.e., by vendor, quantity of each item required at each location.
P.O. Detail
PRINT F-21 ANNUAL
Purchase Order Detail
District Adds Covering Delivery Instructions to Form Complete P.O.
Purchase Orders
To Vendor

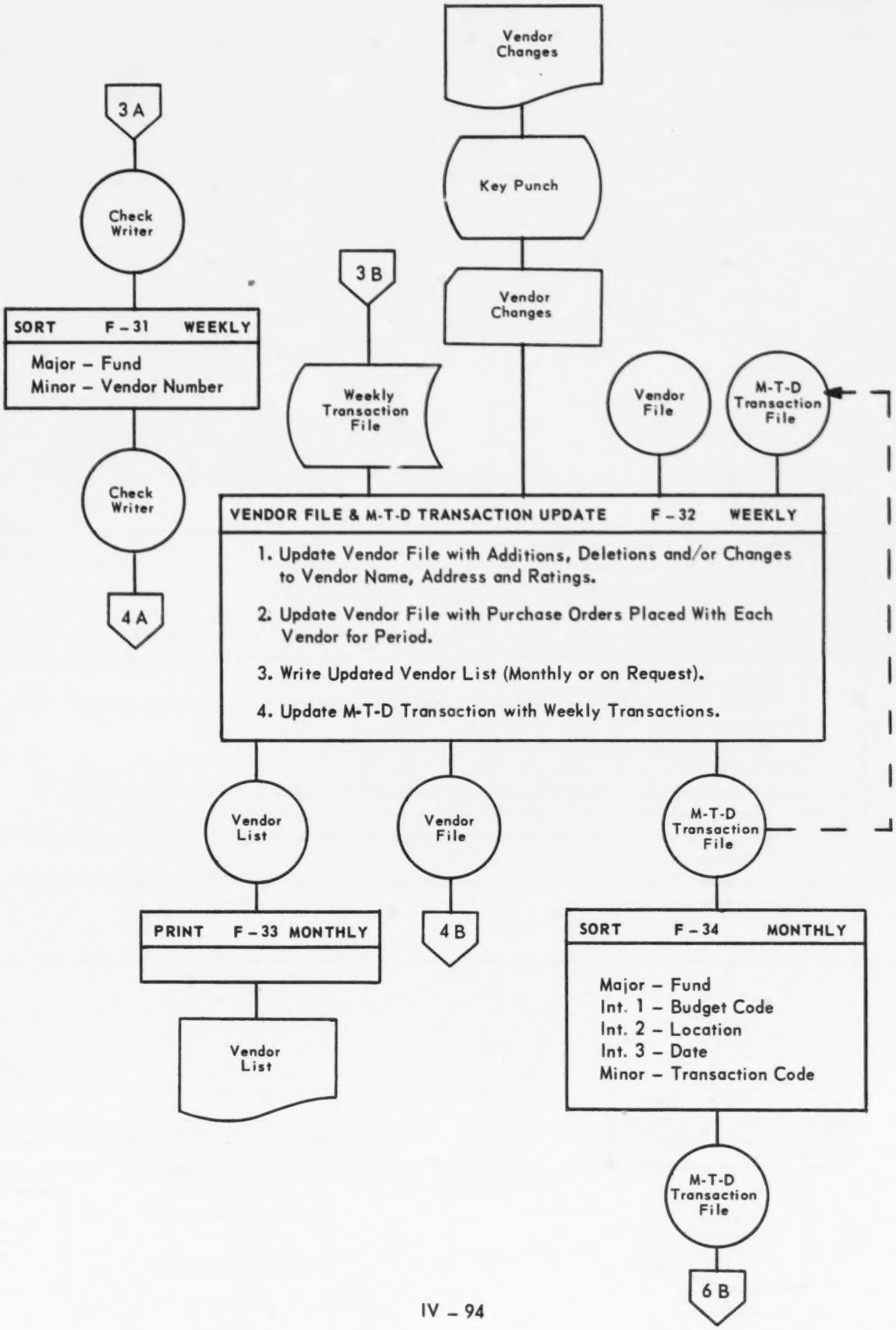

9A
From District
New Account Descriptions
General Ledger / Revenue Ledger
Appropriation Master (New Year)
Journal Entries
BUILD NEW GL & REV. LEDGER
F – 22
ANNUAL
1. Using Journal Entries, and new account descriptions for accounts not in this year's ledger, write new G.L. and Rev. Ledger Records.
2. Summarize to G.L. Control Accounts from subsidiary Revenue and Appropriation Accounts.
General Ledger / Revenue Ledger (New Year)
General Ledger / Revenue Ledger Accounting
PRINT
F – 23
ANNUAL
Opening Entries (Same Format as Trial Balance)

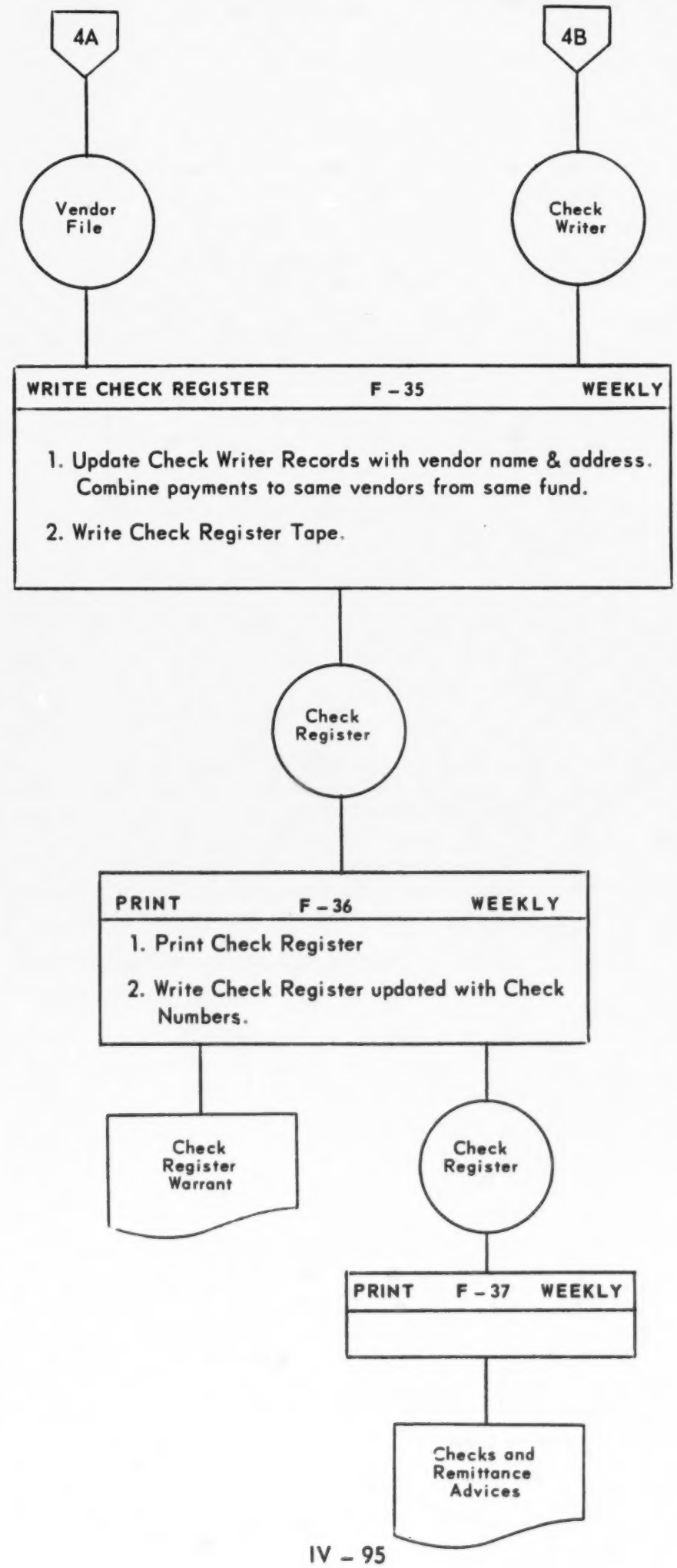
NYSEIS
ENCUMBRANCE
ACCOUNTING

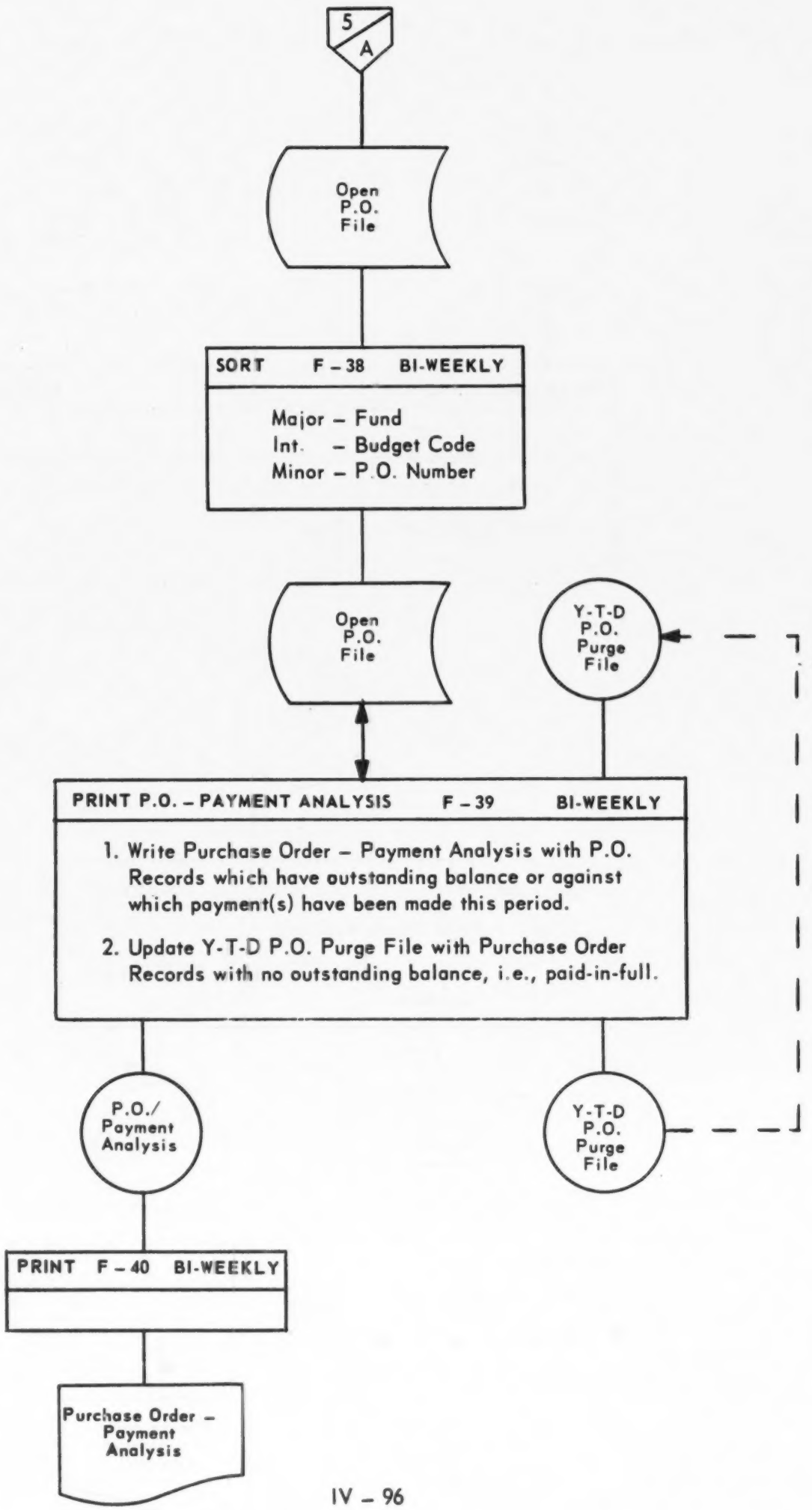

Purchase orders
Journal Entries
Requests to pay, Encumber or Liquidate
KP
1A
Valid Codes
"Turnaround" Invoice Cards
Transactions
CARD-TO-DISK EDIT F-24 WEEKLY
1. Edit Accounting Transactions for Valid Codes, (e.g., Transaction, District, Fund/Budget/Location). Transaction Format, Dollar Amount Tolerances and Correct Batch Controls.
2. Write Detailed Transaction and Error Register.
-Code "Single-Sided" Transactions and Out-Of-Balance Batches with Appropriate Error Codes.
-Change Account Number of Incorrect side of "Two-Sided" Transactions to Suspense Account.
to suspense Account. Write Suspense Transaction on Transaction/error Register.
3. Write Weekly Transaction File with Good and Suspended Transactions.
Trans-tion/Error Register
Weekly Transaction File
PRINT F-25 WEEKLY
2 A
Suspense List
Transaction/ Error Register
To District For Correction
Reenter Corrected Transactions

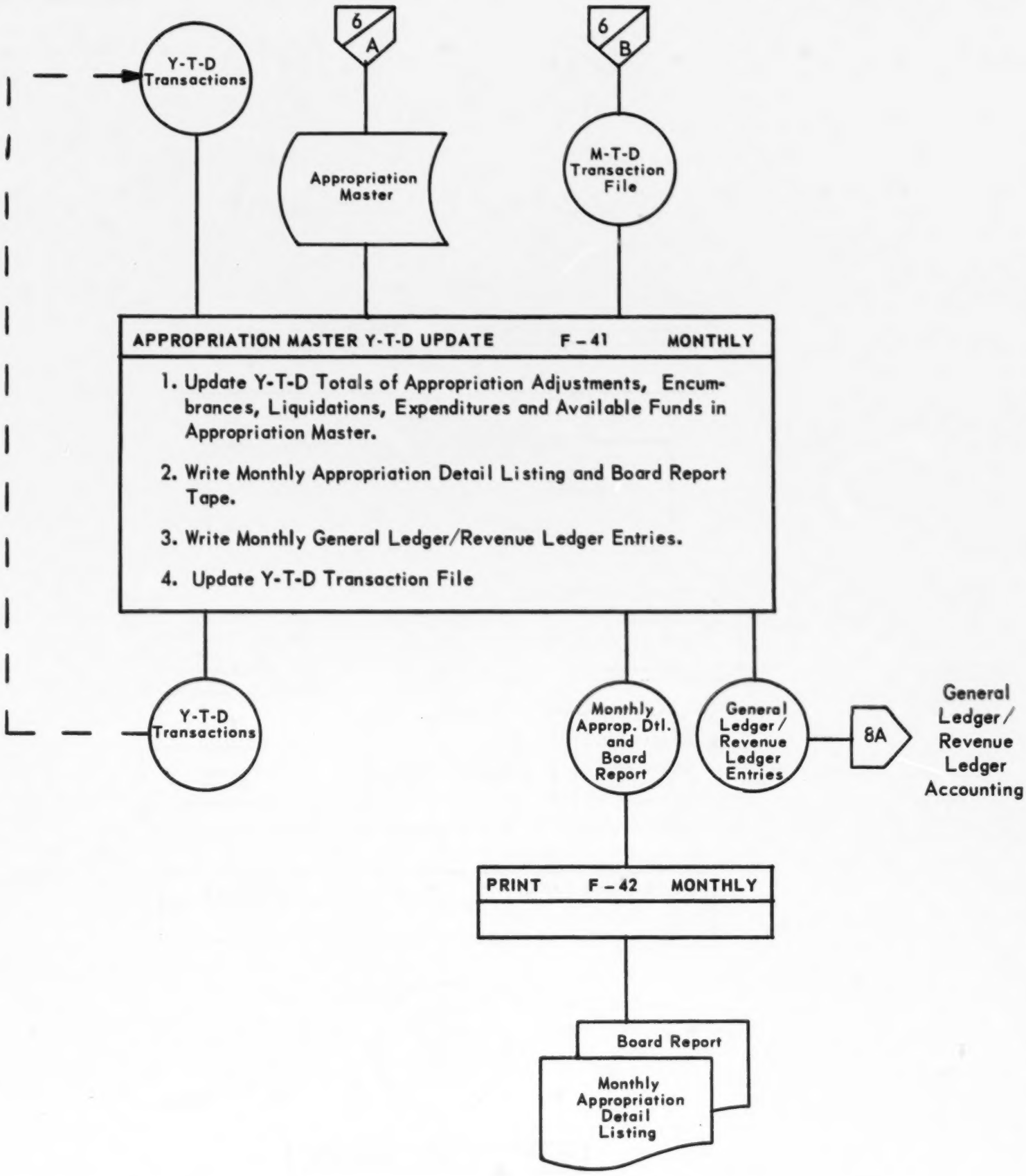
101

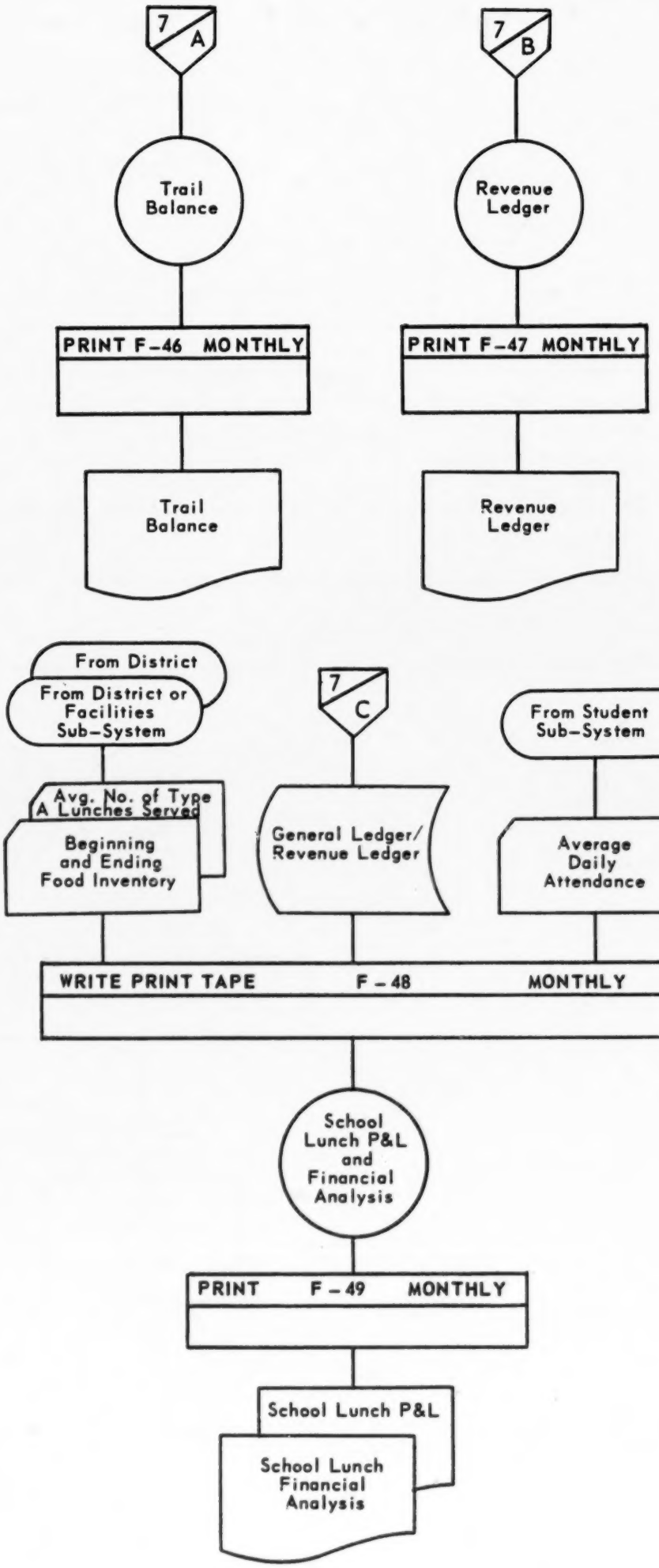

2/A
Weekly Transaction File
SORT F – 26 WEEKLY
Major – Fund
Int. 1 – Budget Code
Int. 2 – Location
Minor – Transaction Code
From Payroll System
Appripriation Master
6/A
Weekly Transaction File
3/B
Open P.O. File
5/A
Payroll Distribution Cards
APPROPRIATION MASTER M-T-D UPDATE GF – 27 WEEKLY
1. Update Appropriation Master Monthly Totals with Weekly Transactions.
– Update Appropriation Amounts with Appropriation Adjustments in Inter-Fund Transfers
– Check Availability of Funds in Appropriation Accounts "Hit" by Purchase Orders and Payment Transactions
– If Funds Unavailable, Reject Transactions and write on Error Tape with Status of Appropriation Account Year-To-Date Balances
– If Funds Available, update Current Month Expenditure, Encumbrance, Liquidation and Available Fields as required.
– Distribute Payroll to Appropriation Accounts affected.
2. Add New P.O. Transactions to Open P.O. File.
3. Update Payment and Outstanding Balance portions to Open P.O. Records with Payment Transactions.
4. Write Check Writing Tape for payments to be made this period (via Input of Pay – Through Date).
5. Punch Turnaround Invoice Cards for Processed Purchase Order Transactions and for Partial Pays, i.e., for balance of P.O. Outstanding.
6. Write Error/Control Tape with Error Transactions and Balance Controls, e.g., Old M-T-D Totals ± Transactions Totals = New M-T-D Totals.
7. Write Appropriation Exception Report Tape.
Control Totals & Errors
Check Writer
Turnaround Invoice Cards
Appropriation Exception Report
PRINT F – 28 WEEKLY
3/A
PUNCH F – 29 WEEKLY
PRINT F – 30 WEEKLY
Control Totals & Errors
Turnaround Invoice Cards
Appropriation Exception Report
To Districts
1A

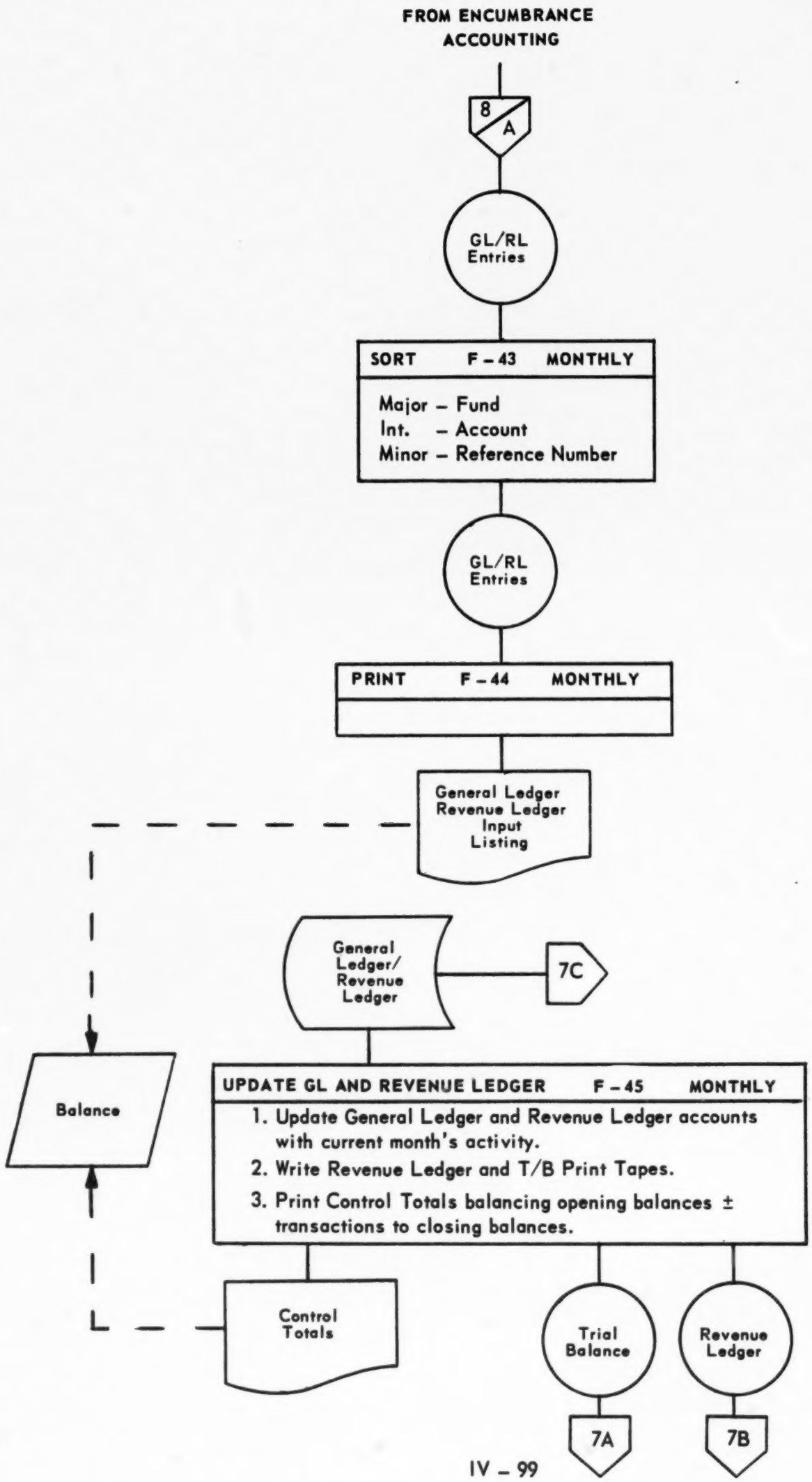

Vendor Changes
Key Punch
Vendor Changes
3 A
Check Writer
3 B
SORT F – 31 WEEKLY
Major – Fund
Minor – Vendor Number
Weekly Transaction File
Vendor File
M-T-D Transaction File
Check Writer
VENDOR FILE & M-T-D TRANSACTION UPDATE F – 32 WEEKLY
1. Update Vendor File with Additions, Deletions and/or Changes to Vendor Name, Address and Ratings.
2. Update Vendor File with Purchase Orders Placed With Each Vendor for Period.
3. Write Updated Vendor List (Monthly or on Request).
4. Update M-T-D Transaction with Weekly Transactions.
4 A
Vendor List
Vendor File
M-T-D Transaction File
PRINT F – 33 MONTHLY
4 B
SORT F – 34 MONTHLY
Major – Fund
Int. 1 – Budget Code
Int. 2 – Location
Int. 3 – Date
Minor – Transaction Code
Vendor List
M-T-D Transaction File
6 B


4A
4B
Vendor File
Check Writer
WRITE CHECK REGISTER F – 35 WEEKLY
1. Update Check Writer Records with vendor name & address. Combine payments to same vendors from same fund.
2. Write Check Register Tape.
Check Register
PRINT F – 36 WEEKLY
1. Print Check Register
2. Write Check Register updated with Check Numbers.
Check Register Warrant
Check Register
PRINT F – 37 WEEKLY
Checks and Remittance Advices


5
A
Open P.O. File
SORT F – 38 BI-WEEKLY
Major – Fund
Int. – Budget Code
Minor – P.O. Number
Open P.O. File
Y-T-D P.O. Purge File
PRINT P.O. – PAYMENT ANALYSIS F – 39 BI-WEEKLY
1. Write Purchase Order – Payment Analysis with P.O. Records which have outstanding balance or against which payment(s) have been made this period.
2. Update Y-T-D P.O. Purge File with Purchase Order Records with no outstanding balance, i.e., paid-in-full.
P.O./ Payment Analysis
Y-T-D P.O. Purge File
PRINT F – 40 BI-WEEKLY
Purchase Order – Payment Analysis


Y-T-D Transactions
6 A
Appropriation Master
6 B
M-T-D Transaction File
APPROPRIATION MASTER Y-T-D UPDATE F – 41 MONTHLY
1. Update Y-T-D Totals of Appropriation Adjustments, Encumbrances, Liquidations, Expenditures and Available Funds in Appropriation Master.
2. Write Monthly Appropriation Detail Listing and Board Report Tape.
3. Write Monthly General Ledger/Revenue Ledger Entries.
4. Update Y-T-D Transaction File
Y-T-D Transactions
Monthly Approp. Dtl. and Board Report
General Ledger/ Revenue Ledger Entries
8A
General Ledger/ Revenue Ledger Accounting
PRINT F – 42 MONTHLY
Board Report
Monthly Appropriation Detail Listing


7 A
Trail Balance
PRINT F-46 MONTHLY
Trail Balance
7 B
Revenue Ledger
PRINT F-47 MONTHLY
Revenue Ledger
From District
From District or Facilities Sub-System
Avg. No. of Type A Lunches Served
Beginning and Ending Food Inventory
7 C
General Ledger/ Revenue Ledger
From Student Sub-System
Average Daily Attendance
WRITE PRINT TAPE F-48 MONTHLY
School Lunch P&L and Financial Analysis
PRINT F-49 MONTHLY
School Lunch P&L
School Lunch Financial Analysis


FROM ENCUMBRANCE ACCOUNTING
8
A
GL/RL Entries
SORT F – 43 MONTHLY
Major – Fund
Int. – Account
Minor – Reference Number
GL/RL Entries
PRINT F – 44 MONTHLY
General Ledger Revenue Ledger Input Listing
General Ledger/ Revenue Ledger
7C
Balance
UPDATE GL AND REVENUE LEDGER F – 45 MONTHLY
1. Update General Ledger and Revenue Ledger accounts with current month's activity.
2. Write Revenue Ledger and T/B Print Tapes.
3. Print Control Totals balancing opening balances ± transactions to closing balances.
Control Totals
Trial Balance
Revenue Ledger
7A
7B